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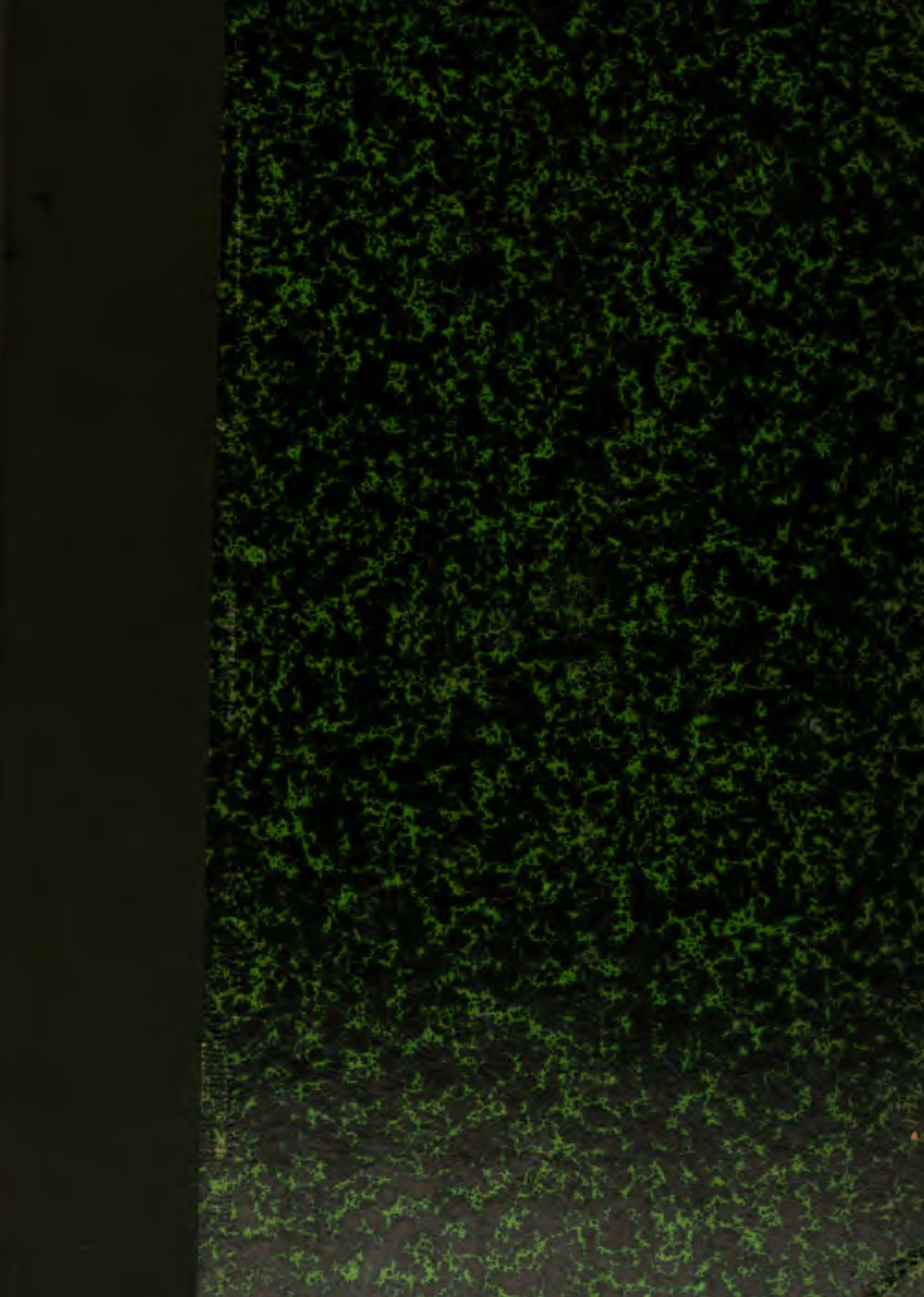
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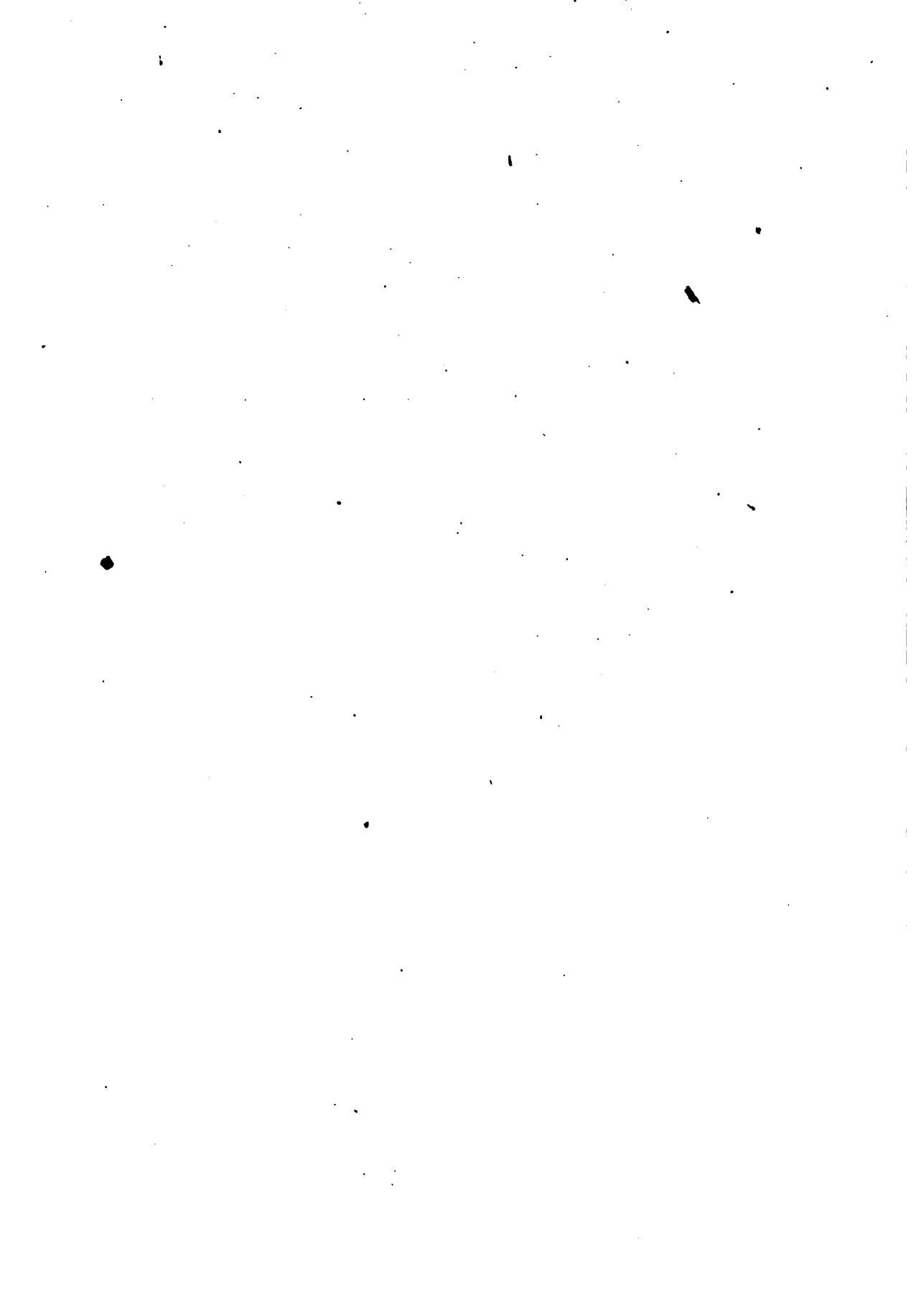
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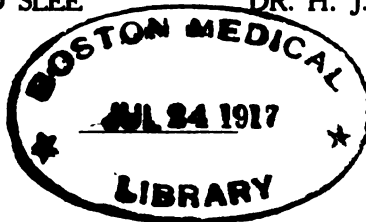
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VOLUME XXIII, 1916

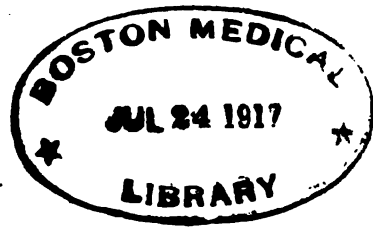
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NOTE TO THE READER: There are in vogue so many synonyms for things and conditions that it is impossible here to enumerate them all (although many are listed); hence, the reader, if disappointed under one catchword, should exhaust the list of equivalent terms before giving up. (Example: Urotropin, formin, aminoform, cystamin, uritone, hexamethylentetramine. Or: Consumption, pulmonary cough, tuberculosis, phthisis.)

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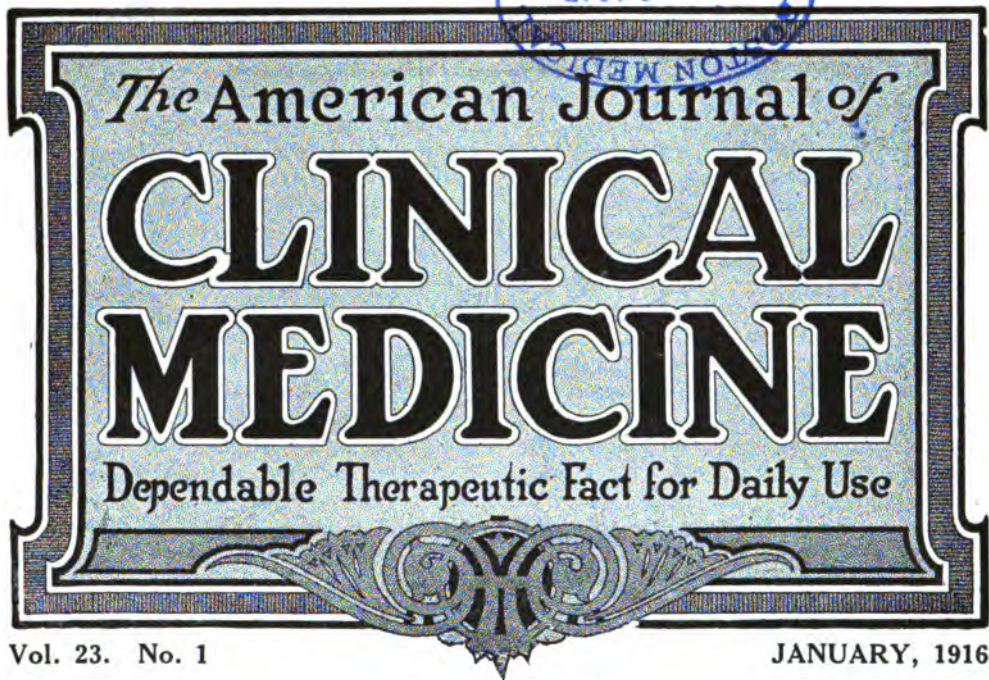
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Another Year

A HAPPY NEW YEAR!

We wonder how many resolutions will be breathed into the oft-repeated expression of this greeting during the next few days. We wonder yet more largely how many such resolutions will be forgotten and broken before the year is a month old. Not that we are cynical—bless our editorial heart, no! Nor is the smile that lurks on our lips even a pitying or pathetic one. It is only the complacent, knowing smile of the philosopher.

Even the five-year-old (who, by the way, knows nothing of resolutions) has already perceived, in elementary fashion, the philosophic truth that lies behind our superior smile. One of these tots, after a (for him) long stretch of silence the other day, announced the profound axiom: "When you're borned, you're borned, and you can't be borned any elser."

There you have it!

There will, let us hope, be some improvement in our lives in the coming year. Heaven knows, there is room enough for it. Not, however, because we make resolutions, but because time and experience and the sense of life slipping away will mellow us. But in the main we shall stumble along in the same old way, blundering, sinning, planning, and

forgetting, but on the whole doing the best we know how.

We may be sure of one thing, however. There is this note of fatality in the youngster's discovery. We must tread the path that the New Year stretches before us, and every succeeding year, until we reach the turn where "the Shadow sits and waits for us."

As the child quaintly said, "When you're borned, you're borned."

It is like buying your ticket and entering the car of a "dip-the-dips," "loop-the-loop" scenic railway. You must go the rest of the trip. No matter what bumps, and shocks, and hair-raising twists you may encounter, there is no getting out of the car until the end is reached. You can only shut your teeth, and clench your hands, and hold tight to the car, and go the route—unless, indeed, you are tipped out by a smash-up, and even that you cannot forestall or prevent. It's a great game—this life of ours!

We fear we may be laying ourselves open to the criticism of treating a solemn subject with levity, if not with frivolity. Well, perhaps we are. It's a case of reaction. We were impressed with the weight of the task and the gravity of the conditions under which the New Year dawns, to write a serious

editorial befitting the situation. But the very solemnity of the thing oppressed and crushed us, and for sheer escape we turned to the lighter aspects of life.

Happy thought! Why not make a New Year's lesson out of this very incident? A common fault of us physicians is that we take life too seriously. We are a little better in this respect than we used to be, since organization has brought us into social relations with each other. But we are still burdened with it. We worry unconsciously, and carry too much responsibility.

One of the most helpful lessons life can impart to us is to do our work as well as we can and then let the results take care of themselves. How often have all of us been amazed to find things come out much better than we anticipated!

Napoleon used to leave his mail unopened, so they say, for a month at a time, and then found that the majority of the letters had answered themselves. A trifle extreme, perhaps, but still evincing a lot of good sense. The great unseen power that guides our lives through a wilderness of trial and tribulation will also guide our ship through the fogs of difficulty and perplexity, safely into the desired haven. To change the figure into the beautiful imagery of Bryant,

He, who, from zone to zone
Guides through the boundless sky thy certain flight,
In the long way that I must tread alone
Will lead my steps aright.

The one plain duty of every man is to face the future as he faces the present, regardless of what it may have in store for him, and turning toward the light, as he sees the light, to play his part manfully, as a man among men.—Theodore Roosevelt.

WHAT SHALL THE DOCTOR READ?

The man who does not move forward and upward moves backward and downward. There is no such thing as standing still, for any human being. Tell me what you read, and I will tell you what you are becoming. However, there is so much one should read, so much that one must read, that the choice is becoming a difficult one.

Doctor must read the newspapers, local as well as metropolitan—he must know what's going on.

Doctor must read the magazines, some of them—he must know the trend of human thought and progress.

Doctor must read medical periodicals, special and general, and such of the new books

as most subserve his needs in his special line of work.

Besides these, he must read ahead—must add to his store of general information; for, the community must look up to its medical adviser as the authority on all manner of subjects; and it is to his advantage that he cultivate this sentiment.

But how is a general practitioner to find time for all this enormous amount of reading and, yet, attend to practice, keep an eye on his interests, collect his fees, and occasionally even devote an hour to his family? The doctor religiously inclined also wants to go to church occasionally; although this should be considered an entirely voluntary rather than an obligatory part of his life, because of the very nature of his vocation. Here is the plan adopted by the present writer—it works well with us, and it may serve some of you:

Invest in the latest and best cyclopedia, and take a volume to bed with you; look over the articles, skipping judiciously, and read the items that chance to interest you. Somewhere you come upon something that opens a subject in which you are more especially interested, and you may feel impelled to secure works devoted to it and in this way to pursue the subject further. The matter may be something that at the time is agitating your community and upon which you are almost sure to be questioned; or it may be a matter about which you will be able to give valuable enlightenment to a friend.

The cyclopedia is, in effect, an index to information, and if one treats it as such the general knowledge obtained from it, added to that more extended information gained from the special works suggested, will go far to make a man justly credited with being well informed.

Outside the purely medical reading, the one thing the doctor must understand thoroughly is sanitation—personal, domestic, municipal. The doctor must know more about this than anyone else in the community, and be prepared to advocate and direct it at all times. The profession, as a class, should consistently push toward the position of advisers of the people, in all that pertains to the prevention of disease and the prolongation of life—a useful, enjoyable life. The future of medicine lies right here; and he who appreciates this fact and directs his steps in this direction will find himself on the right road, and ahead of his fellows.

We have been preaching this doctrine for many years, and it is with pleasure that we

see how so many are taking up the cry. We see in this the only right solution of the evils besetting the medical profession—poverty, lack of appreciation, unlawful and unwise competition. We are waiting patiently for the body of our fellows to take up this problem and put it into practical operation.

There is no doubt whatever of the fact that the proximate principle is here to stay and that the isolation of these substances has advanced therapeutics wonderfully. Modern pharmacology will be the basis for prescribing by the on-coming generation of physicians, and modern pharmacology deals largely with proximate principles, the employment of which is destined to grow as exactitude in prescribing grows.—Dr. Thomas S. Blair, in "The Medical Council."

EDWARD LIVINGSTONE TRUDEAU

Whenever I think of tuberculosis—I mean, of course, whenever I think of it in its broad, human relationships—I think of three men who, because of their valiant fight, not so much against the terrible disease as in the teeth of it, have always inspired me with a devoted hero-worship. These men are Robert Louis Stevenson, Henry C. Bunner, and Edward Livingstone Trudeau.

These men looked continually into the face of death with a smile on their lips. They lived cheery, busy, useful lives, albeit much of their activity was directed from a sick-bed; so that there is left to the world only the memory of their strength, and not of their weakness. Two of them, Stevenson and Bunner, chose to ignore their arch enemy. They were both literary men. Neither in their private nor in their public writing did a single reference to their affliction escape them. They both gave to the world a genial, wholesome humor, and died, at last, with the smile on their lips.

Trudeau chose another course. He elected to make a deliberate and heroic fight against the disease that attacked him, both in his own behalf and in that of others. He bravely turned his own misfortune into the occasion of a public crusade against disease and death. He has generalized the modern forces of the antituberculosis campaign.

Stevenson and Bunner died several years ago. Trudeau outlived them—a tribute to the effectiveness of the warfare that he waged. Many and many a stricken man and woman could bear testimony to its effectiveness, too. Death has claimed him at last. In a sense I suppose it may be said that tuberculosis got him in the end. If the enemy can get any doubtful satisfaction out of such a questionable triumph, he is welcome to it. The verdict of the world will be that the triumph lay with

Trudeau—physically, for he lived, happily and usefully, more than the average span of human life; morally, for he led the way to a final conquest of the foe. "He has fought a good fight, he has finished the course, he has kept the faith; henceforth there is laid up for him a crown of righteousness, which the righteous Judge shall give him in that day."

CARDIAC STIMULANTS

Heart stimulants are remedies that rapidly increase the force and frequency of the pulse when depressed. They are employed to prevent or to relieve failure of the heart's action, in syncope or shock, as a consequence of emotion, trauma, cardiac sedatives, snake poison, febrile conditions, or other maladies. Among the leading agents of this class may be mentioned the spirit of ammonia, alcohol, atropine, ether, chloroform, camphor, and aromatic volatile oils. Important physical measures are: heat or cold or counterirritants, applied over the heart.

Brunton attributes most of the effect of alcohol to its direct stimulation of the mouth, throat, and stomach. Hence, to secure this effect, it should be given in concentrated form. More powerful local irritants have more cardiostimulant action. The Hindus have a saying that in conditions of profound depression it is necessary to bring the tears into the eyes in order to break the shock of the initial stage of dysentery, cholera, and other violent tropical seizures. Accordingly, they administer pungent combinations as, for example, equal parts of chloroform, camphor, tincture of capsicum, oil of cajuput, with 4 parts of ether, taken, undiluted, in teaspoonful doses. This mixture accomplishes the object quite surely, much more effectively than does pure alcohol or any of its preparations, provided the patient can swallow it.

Ether and chloroform merely are stimulant in the same manner; that is, by local irritation; and the latter only in small doses.

Ammonia acts like alcohol, but also by stimulating the vasomotor center. In treating snake bite, water of ammonia has been injected into the veins in 1-2-dram doses. The stimulation is immediate, but evanescent. The same medication has been employed to resuscitate persons apparently dead, and it even has prolonged life for a period sufficient for the dying patient to finish important business.

Brunton's guide as to the use of alcohol is, that its effect is to be judged by its action upon the circulation, to wit: if alcohol

brings the circulation nearer to normal, it is beneficial; if not, it is deleterious. So, alcohol may slow an excessively rapid heart or accelerate it when too slow; also, it may render a small, soft, compressible pulse larger, fuller, and more resistant.

The application of camphor as a heart stimulant is limited to these conditions: fevers, with a tendency to failure of the circulation, as in the typhoid group; the eruptive fevers, with delayed or retrocedent eruption; asthenic forms of pneumonia, and the typhoid state when appearing in any malady. Camphor now generally is administered hypodermically in oil solutions, although it acts more speedily taken internally in concentrated form, as in the mixture, quoted above, used by the Hindus. The effect is more sustained than that of alcohol or ammonia; however, the local irritation may eventuate in active inflammation, while large doses may occasion grave irritation of the urinary tract.

The volatile oils resemble camphor in their action as well as in their dangerousness in overdoses.

In capsicum, we have the maximum of local stimulation with the minimum of dose. The old Thompsonian "Number 6" (tincture of capsicum and myrrh) was a safer and more effective stimulant than any of the foregoing, and it has no superior, if an equal, among our modern agents. Even for the purpose of breaking up or preventing a cold after exposure to cold and wet, a cup of hot capsicum-tea is the best remedy at our command. It is the ideal stimulant, by virtue of usually being immediately obtainable, acting quickly and powerfully, and leaving no bad after-effects; while it also is applicable for any accessible diseased mucous membrane and of the skin. In the form of the oleoresin, more stimulant can be carried in a dram-vial than in a gallon-jug of whisky.

One of the most powerful cardiac stimulants is heat, whether applied by way of the stomach or to the surface of the body. The hot-water-bag has replaced the ancient poultice and the numerous objectionable oldtime medicaments. When the temperature, that has overstimulated the heart, falls rapidly, the hot application over that organ may prevent or check the tendency to collapse.

The application of cold over the heart powerfully stimulates its action; however, the influence is of brief duration, while the continued application depresses. Frigotherapy at best is a laboratory method rather than a clinical one, to be resorted to in an emer-

gency, when there is no time for other measures, but quickly to be replaced by remedies of more enduring action.

Pain is a powerful stimulant. Threatening chloroform narcosis has been interrupted and life sustained by the forcible dilatation of the anal sphincter; opium-narcotism has been held off by pushing a sharp blade under the finger-nails.

A stimulant is a remedy that, acting instantly and powerfully, arrests the fall of vitality and arouses the failing powers of the system, especially of the cerebral centers. It is merely a whip and necessarily must be followed by measures calculated to ensure a continuous restoration of strength, that is, tonics and nutritives.

The passions have been utilized thus; and the spirit, pluming its wings for flight into the Hereafter, has been called back to earth by the sudden arousal of love, duty or jealousy.

There's a good time coming, boys,

A good time coming.

War in all men's eye shall be

A monster of iniquity,

In the good time coming.

Nations shall not quarrel then

To prove which is the stronger;

Nor slaughter men for glory's sake—

Wait a little longer.

—Charles Mackay.

LO, THE POOR CONSUMPTIVE!

To the practitioners in the resorts patronized mostly by the tuberculous, we rightfully look for expert information concerning tuberculosis and its victims—and we generally get it. Not all men—including doctors—are clear as crystal in their transmission of the facts presented to their mental view; often they communicate their own color—blue, green, red, yellow—while any ocular or mental shades they may be possessed of are likewise imparted to the verbal pictures they thus present. Many a gloomy prognostication is founded, not so much upon the ominous condition of the patient, as upon the doctor's need of a liver-pill.

To all of which we find a notable exception in Thompson Frazer's article in *The Charlotte Medical Journal* for November, 1915. It is entitled, "What the State and You Can Do for the Consumptive." The "you" is particularly refreshing in these days, when so many are asking the State to do all but chew their food for them, while they themselves

lie back and take their ease. There may, after all, still be found a remnant of the old pioneer stock, that could take its own part and needed no help or supervision, nor asked for it. Doctor Frazer writes from Asheville, where he surely has abundant material for study.

Specifically, Doctor Frazer calls upon the State to care for the indigent consumptive. Poverty is one of the essential factors in the etiology of tuberculosis, as this disease occurs most frequently among those who can not afford fresh air, sunlight, dry and warm dwellings, good food, not to mention all the other sanitary prophylactics. These indigent consumptives are the greatest peril to any community, and it is worth while for every healthy citizen to aid in removing this threatening menace against his own health. One may be working in office or shop with the tubercle propagator, may be drinking milk from a consumptive's cows, one's children may sit in school beside the infected child of a tuberculous parent; in truth, the perils from all other infectious maladies taken together do not equal those from the tubercle-carriers.

Tuberculosis is readily curable in the early stages; however, the treatment is costly and the poor can not afford it. There are too many consumptives for private benevolence, and the danger is so universal that general prevention alone can cope with it. Were we to provide for nineteen consumptive children in a given school, even then the twentieth, if neglected, might infect the other healthy pupils.

To the State, Doctor Frazer specifically assigns the following duties: (1) The maintaining of a free dispensary, where the diagnoses may be made early; (2) maintaining a sanitarium for treating the poor in the early, curable stages; (3) providing school inspection and fresh-air schools for children below par; (4) providing a whole-time qualified health-officer who is to look to the enforcement of the law; also visiting nurses, and a hospital for advanced cases; (5) exacting compulsory notification by physicians.

Considering the danger to the public from these cases and their inability to pay for the expensive treatment necessitated, these demands are no more than can justly be asked of the community. The only alternative seems to be, to adopt the open-air method and turn the creatures out, to live or die, as the powers above may determine.

This leaves important duties to the individual: To give moral and financial support to the State in the fulfilment of its part; to

do each his share in combating the evils of poverty that render tuberculosis so prevalent and fatal, by seeing to the enforcement of child-labor laws, factory inspection, and living-wages for the laborer, such as will enable him to provide the decencies of life for his family; to organize anti-tuberculosis societies; to contribute to the care of those who can not care for themselves.

This means something more than dodging one's taxes, slipping a "V" to the inspector, to induce him to ignore the ventilation and light restrictions of building-authorities, going into the open market and buying labor so cheaply that men must herd together like rabbits, to live on their earnings, cutting taxes for schools so closely that warmth and ventilation can not be supplied to the kiddies, or in other ways treating the community like a business competitor, who is to be "skinned" to the limit.

When the practice of mankind shall have attained to the level of its knowledge, when its art ranges itself by the side of its science, then we shall see the end of preventable maladies, and then, also, there will be material for new diseases or for wars bigger than the "crime of 1914."

Sachs comes in with a telling presentation of the "responsibility of the city," in a contribution to *The American Journal of Public Health* for November, 1915. He asserts that the trend everywhere is toward a gradual supplanting of the enthusiastic pioneer work of private antituberculosis organizations by the more comprehensive, more correlated system of control of the disease by efficient municipal health-departments. Efficiency calls for concentration of effort and authority. The problems include hygiene of streets and alleys, freeing of the air from smoke and dust, extending vacant spaces between buildings and converting them into parks and playgrounds, building-regulations for dwellings, schools, public buildings, and shops, and systematic supervision of schools and children. He concludes:

"In the further development of the present arrangement for the control of tuberculosis, municipal health-departments must gather strength, be given funds, and acquire the support of the medical profession and the people at large, in directing a campaign against this most widespread disease of modern times. Efficiency calls for united effort, with centralization of authority. The spirit that makes possible the country-wide effort of private organizations must finally find its expression in the enthusiastic support given

to modern health-departments, in full accord with their enlightened communities."

The North Carolina Health Bulletin names the following facts, signs which everybody should know:

"Your chances for recovery depend upon an early diagnosis.

"A hemorrhage from the lungs means tuberculosis, without exception.

"A morning subnormal temperature, with afternoon rise, means tuberculosis, 99 times out of 100—and probably in the 100th case.

"A low blood pressure is suggestive of tuberculosis.

"A cough lasting more than three weeks should suggest tuberculosis and cause resort to a physician.

"The tubercle-bacillus in the sputum is a positive sign of tuberculosis, but the diagnosis should be made before this can be found."

That Michigan is awake to the importance of this matter, is evidenced by the state legislature's appropriation of \$100,000 for two years' work in the prevention and eradication of tuberculosis. *Ourdoor Life* suggests that this sum be utilized in a survey and study of the situation, and an extensive and intensive educational campaign.

Write it on your heart that every day is the best day in the year. No man has learned anything rightly until he knows that every day is Doomsday.—R. W. Emerson.

LOBELIA AND ITS ALKALOID

Since Samuel Thomson introduced the Indian-tobacco as a remedy, this American plant-drug has been a mainstay of his successors and of the better educated disciples of the botanic "schools" that followed after them—and, naturally, the *bête noir* of their opponents. This opposition sentiment happily has died out—we live in the present, and are not disposed to trail about with us the antagonisms and absurdities of the remote or recent past. Still, the profession is sharply divided as to the merits of lobelia, as between those who, using it habitually, rely upon it as a most valuable remedy, and those who, never having employed it, look upon it as useless or even dangerous.

A physician of the "big" school, a friend of ours and a man who enjoys the respect and confidence of his colleagues, has presented his views on lobelia, with a sequence of opinions thereon collated from the literature of the century. Dr. C. W. Hunt makes this presentation in the current issue of *The Charlotte Medical Journal*. Quiet and sensible, with-

out overenthusiasm or that determination to condemn which spoils most of our investigations of drugs fathered by outsiders, Doctor Hunt's paper is at once a valuable contribution to the subject and a model of what such papers should be. He calls himself an optimist, having faith in his remedies, and adds: "Faith born of careful study will not be disappointing when coupled with proper diagnosis and application." Surely. Following are several more quotations from his essay:

"1858. Wood: Pseudomembranous croup. The internal use of lobelia is here highly serviceable."

"1868. Stillé: Elliotson writes that it is the best medicine for spasmodic breathing. Bower says, in all cases where dyspnea is an urgent symptom, lobelia is applicable. Neuman terms lobelia one of the most valuable medicines in diseases of the lungs, relaxing respiratory spasm with incredible rapidity, even when dependent on organic disease, as of the heart, with tormenting dry cough and insufferable tickling in the throat. Nothing approaches the action of lobelia, direct and specific, upon the motor respiratory nerves. It is speedier and more certain than digitalis, more direct than ipecac."

"Schlesier, Andrews, Morelli, Tott, and Erble confirm these encomiums. But Flint, in the same year, stated that lobelia was not prescribed."

"1880. The lecturers at the P. & S. College of Baltimore pronounced lobelia depressing, unreliable, and too irritating; the sole use suggested was as a local application for rhus poisoning."

"1883. Bartholow, who drew largely on the work of the Cincinnati group, confirmed the foregoing recommendations and advised lobelia for impactions, intestinal atony, hernia, and intussusception, by enema. He still found it harsh and dangerous, but thought it might find place in treating tetanus and strychnine-poisoning. Ott now investigated the alkaloid lobeline and defined its activities. It first increases vascular pressure, by exciting the peripheral vasomotors, followed soon by a fall, the heart weakening, the peripheral circulation embarrassed and the lungs obstructed, so that oxygenation is rapidly impaired and the temperature falls; the action centering on the motor nerves, especially the medulla and the respiratory center, the nucleus of the pneumogastric."

"Biddle followed Flint, but Ringer used lobelia in large doses as a remedy for respiratory spasms."

"1889. The U. S. P. dilates especially on the effects of toxic doses, but repeats the uses for spasmodic maladies."

"1897. Waugh: Finds the alkaloid less apt to induce nausea, stimulant to digestive tract, irritating in overdoses; expectorant, laxative, diaphoretic; suggests small and repeated dosage, to increase the activity of vegetative functions, innervation, and circulation, in minute doses; for angina pectoris, full doses, also for rigid os or perineum; small doses energize uterine contractions; as sedative, in fevers and local inflammations. Here we have the first intimation of the all-important differences between small and maximal doses. The previous unfavorable views were based on toxic dosage."

"1906. Shoemaker: Repeats the effects of large doses; notes the diuretic and narcotic actions; but draws the line, with lobeline, between the small- and large-dose effects; he warns against its use in cardiac dyspneas; quotes Nunez' eight cures of tetanus, and introduces the hypodermatic use of lobeline."

As we have remarked, those who have not made themselves familiar with lobelia dread its violence and term it too dangerous for use. As with aconitine and veratrine, these fears subside after better acquaintance. There is less reason for them than with antimony, which adds a serious peril from local irritation; and far less than from mercury, which entails later dangers, besides. Doctor Hunt, a respected member of the dominant school, has made himself familiar with lobelia, and he has this to say of it:

"I consider lobelia the kind of antispasmodic . . . regulating the circulation, like aconite and veratrum; actively antispasmodic, like tobacco . . . its nauseant effect guarded by opium, if too depressing to the heart, adding cactus . . . lessening the force of the heart in full doses without slowing its rate . . . I have prescribed it in small, medium, and very large doses, and I have never witnessed a violent or dangerous effect. Lobelia, like aconitine, antagonizes the febrile process, lessens respiration, especially in mucous inflammations, where its secretion stimulus is shown . . . ideal for spasmodic colics or for an overloaded stomach, given to emesis; tonsillitis, acute pharyngitis, tonsillar ulcer, asthenic diphtheria, acute catarrhs, catarrhal bronchitis, pneumonia, overaction of the heart, peritonitis, puerperal metritis, cerebrospinal meningitis, acute maniacal delirium, active cerebral congestion, neuralgia, ovarian congestion, rigid

os uteri and perineum, asthma; and in puerperal eclampsia with the H-M-C tablets."

This shows the wide range of application for this remedy in the hands of a man who knows it and can handle it as a good carpenter does any sharp-edged tool.

DOCTOR REGISTER AND HIS JOURNAL

Dr. Edward C. Register has been elected president of the Medical Editors' Association for the coming year. Doctor Register, as editor of *The Charlotte Medical Journal*, has given us a fine example of what can be made of a local periodical. Issuing from Charlotte, the journal covers the Carolinas, the Virginias, Georgia, and eastern Kentucky and Tennessee. It is supplied with articles contributed by the physicians of this section—the November number containing seven contributed by North Carolina physicians and one by a Virginian. A large part of the advertising is also from local interests. In point of quality, the reading pages compare favorably with those of any journal from the "great medical centers." The material as a whole is instructive, interesting, up to date, and clean. Altogether, Doctor Register has fully earned the honor conferred upon him.

I do not ask for more to seek and love me,
I do not ask for brighter eyes to move me,
But sharper sense, to miss no hailing sign
Of fellowship in spirit seeking mine.
No golden shore I seek, but a heart that sings
The exquisite delight of common things.
The kingdom of heaven is not there, but here—
Oh, for the seeing eye and hearing ear!

—Frank Crane.

ARRESTS OF PHYSICIANS UNDER THE ANTINARCOTIC LAW

Two Chicago physicians have recently been arrested for violations of the anti-narcotic law, and one of these was tried and convicted. This man, it was shown, had written thousands of prescriptions for narcotic drugs. We have not had an opportunity to review the evidence in his case, having been compelled to depend for information upon the newspaper reports, but it appears that he had become the source of supply for a great many victims of the drug-habit. Nevertheless, this physician claimed that he was treating these patients by the withdrawal method; that in many instances he received no pay whatever; and that his office was simply thronged by hundreds of poor wretches who appealed to him for relief. He believed, he avowed, that he was doing a righteous

work. However, the wholesale way in which he wrote prescriptions for those people was enough to arouse suspicion on the part of the authorities. The punishment given him by the court was very severe. He was fined \$2500.00 and sentenced to five years in prison. Apparently his conviction was just.

The other physician was a man of excellent reputation, whose story was told by Dr. J. V. Fowler, at a recent meeting of the Council of the Chicago Medical Society. We quote his remarks, as printed in *The Bulletin* of October 16:

"The doctor was visited first of all by a patient who was a drug-fiend, and who was suffering from the effects of the withdrawal of the drug. The doctor was urged to take the case. At first he refused and tried to get the man to go to some institution. The man made excuses, saying that he couldn't go at the present time and wouldn't go to the County Hospital, but stated that, if he could only get on his feet for a while, he could earn enough money to take the treatment. The doctor gave him some morphine, which he recorded. The man came the second time, and this time the doctor cut down the amount of the drug so that he had a smaller amount to last a greater length of time.

"Later on, possibly a week, a lady appeared, representing herself as the patient's wife; she stated that he was very much better and had almost dispensed with the use of the drug. She described the man, told his address, and the like, and, the doctor gave her a small bottle of a weak solution of codeine, but told her not to let her husband know it was a weaker solution; also told her not to come again, as he would not give her any more, stating that her husband must come. She came again about a week afterwards, stating that her husband could not come, and he gave her another still weaker solution. In a few minutes, there appeared a couple of detectives and locked him up.

"His wife telephoned me. I found he was booked for 9 o'clock the next morning. I immediately got busy and did everything I could to get him out of jail, but all to no purpose. When the case came up he was discharged. A reputable man was thrown into prison, without any charge for any crime; no friends could see him or learn anything about it, except that he was locked up. He was held in jail over night; and the papers published it broadcast. His reputation is affected to such an extent that possibly he will never live it down. And all for what? Nothing! It is time that we were putting

our shoulder to the wheel and stopping such prosecutions. We are in sympathy with the purport of the law and we are all anxious to catch the violators of the law, but to throw a man into prison on suspicion alone is not a thing that should be allowed to exist. I hope this Council will take action in this matter when it comes up for action."

We bring these two cases to the attention of readers of *CLINICAL MEDICINE*, so that they may understand the importance of making themselves conversant with the provisions of our narcotic legislation. Last month we printed some of the recent federal regulations.

For the man who deliberately traffics in narcotic drugs merely for the sake of making money, and without thought of the welfare of the poor unfortunate people who are made to suffer by it, we have no sympathy whatever; nevertheless, we must protest against the enforcement of the law in such a way as to hamper any physician who is trying honestly to relieve suffering.

As we have said in the past, there is no reason why any physician should feel alarmed about this law. Whenever the doctor has a legitimate use for a narcotic drug, he should so use it, just as he has always done in the past; however, he should give it intelligently, make the records required, and obey all of the law's provisions with the utmost care as to detail. *Under no circumstances should he allow himself to become a regular source of supply for persons using narcotic drugs improperly.* Addicts should be treated by the doctor in person, and never through the intervention of a third party.

Any physician who will take such care will never get into trouble.

The first three or four men who come to mind who have acquired wealth in the practice of medicine are not spectacular, and have not cared whether they acquired wealth or not.—Robert T. Morris.

THE RELATION OF CONSTIPATION TO VARIOUS DISEASES

Half a century ago, the great Jean Martin Charcot declared that "ninety-five percent of all diseases have their origin in the digestive tract." In his day, and from his standpoint, of course, this assertion was a purely empirical inference, drawn from continuous clinical observations, and whatever weight it had was derived from the personal authority of the man who uttered it. Several years later, Charles Bouchard, doubtless following out the ideas of Charcot, with whom he was early associated, carried out an extensive investi-

gation of the influence of the condition of the gastrointestinal canal upon bodily health, applying to his researches what were in those days scientific methods, and, as a result, enunciated his famous doctrine of gastrointestinal autointoxication, which latter term he coined.

Both of these men's teachings received a great deal of attention at the time of their publication, and bade fair to furnish the key to many obscure problems in medicine. These teachings, in fact, represented the rational, scientific exposition of the concept of disease, which up to that time had held the field rather vaguely; and they may be regarded as the climax of the earlier stage of modern medicine. The "humors" and "diatheses" of the older school received a definite and intelligible signification in this newly announced phenomenon of absorption and intoxication from the gastrointestinal sewer. Both theory and experience seemed to confirm the doctrine; it gained general currency; and the therapeutics to which it gave rise justified it.

With the discovery of the microorganism and the demonstration of the important part played by bacterial infection in the production of disease, there came a revulsion of professional opinion and sentiment. Everybody rushed to the microscope and the culture-tube, and in the stampede Bouchard's doctrine of autointoxication was swept aside and contemptuously discarded.

Nevertheless, it is worth remarking that even in this recoil and up to the present day medicine never really lost the impress made by the teaching of Bouchard. The cleaning out of the gastrointestinal tract never ceased to be a prime factor in the treatment of disease; nor has there ever been wanting, during all the intervening period, faithful and influential advocates of Bouchard's views. But, to some extent, the advent of the doctrine of bacterial infection and the prevalence of all the views and practices to which it gave rise temporarily eclipsed his teachings and prevented the investigation and elaboration which they deserved.

Among those who continued to believe in the importance of gastrointestinal autointoxication and to shape their therapeutic principles and practice by it, we humbly (and, yet, with considerable pride, too) point to ourselves. In season and out of season, we have not ceased to preach the therapeutic doctrine of "clean out, clean up, and keep clean," as being an elemental principle in the effective treatment of disease. We have

stoutly maintained, often in the face of opposition and ridicule, that intestinal toxemia is the *fons et origo* of many otherwise obscure disorders, and that even where the pathology-in-chief was a bacterial infection, or something else, the absorption of intestinal toxins created a vicious circle that aggravated the disease and hindered, if it did not prevent, recovery.

At last it seems that Charcot's and Bouchard's position—and our own steadfast adherence to that position—is to be justified by present-day confirmation. The psychology of the medical scientist apparently is not very different from that of the man in the street, after all. It needs that a perfectly obvious truth, which anyone with eye might see for himself, shall be uttered with the force of some popular personal authority in order to be recognized and become current. With that, however, we shall not quarrel. We are only too gratified to see that the truth is coming into its own, by whatever channel it be.

To Sir William Arbuthnot Lane, the English surgeon, must be credited this modern rehabilitation of Bouchard's really epoch-making doctrine; and, largely because of Lane's prestige and influence, many other able men have lately given considerable time and attention to the subject. To be sure, it has been approached from a somewhat different angle: from the surgical rather than from the medical, the anatomical rather than the functional. But, in the ultimate result, it is all one. For, if kinks in the bowel and intestinal stasis bring about bodily disorders, it can be only by reason of intestinal toxosis in its broadest intent.

From the theoretical standpoint, the recent work of Arthur Keith tends to emphasize the functional aspect of the matter; while from the clinical angle the observations and investigations both of surgeons and internists in our own country as well as in England, are slowly, but surely, establishing an unmistakable relation between constipation and various diseases in which such relations have heretofore been unsuspected.

It is not for the mere purpose of saying "I told you so" that we call attention to this important subject, but to make a renewed plea, in the light of this modern awakening, for more and more consideration of the intestinal canal as a positive source of mischief in many disease-conditions and a potential cause of trouble in many others. The work of Lane, Keith, Reed, and others gives a new significance to the plea that we have been making for the last twenty-five

years, "Clean out, clean up, and keep clean"; and it suggests a large field of clinical research—in which we urge our readers to take part—into the causes and effects of constipation as an important factor in disease.

If man had never been hungry for woman, and if woman had never been hungry for man, none of the finer traits of human character could have been developed. Love, art, music, poetry—in short, all of the finer qualities that have gone so far toward making life beautiful, could never have existed.

—Lee Alexander Stone.

THE PATIENT OF MODERATE MEANS

We have long been of the opinion that the present method of dealing with persons of small means who are the victims of obscure illness is unsatisfactory. Patients of the poorest class can secure expert examination and advice by entering a large hospital, where they have the benefits of consultation with different experts. Wealthy persons can employ the services of numerous experts to determine their ailments, by paying large fees for such information. Persons of limited means, however, can neither expect to be treated as paupers nor afford to pay for numerous expert opinions. As the situation stands at present, therefore, most of these unfortunate patients are cut off from the best of modern scientific medicine.

This is a situation which must have impressed every practitioner. In a general way, we feel that the matter of dispensary service is not on a proper basis. We have always felt that in offering himself for clinical demonstration a patient was tendering more or less of a *quid pro quo* for the medical or surgical service that he received, rather than availing himself of any species of charity, and that the restriction of such service to those unable to pay for it is fundamentally wrong.

To be sure, such a proposition is open to the objection that it would tend to bring about an abuse of clinical advantages, and an injustice to the practicing physician. Perhaps it would; but we doubt it. As the matter stands today, there are large numbers of people receiving clinical attention who could afford to pay a moderate sum to a doctor, and a still larger number who, under the present system, will not submit themselves to the clinic who are really worthy of it, and whose cases would serve the cause of medical education admirably.

It is, of course, right that the indigent should receive the prime and full advantages

of clinical service; and it is equally right and proper that those who can afford to pay for medical service should do so. But we see no reason why either of these principles need be violated when the person of moderate means is given a share in the scientific advantages of the day at less than the usual rates. Why may not a person of this class be permitted to pay a small or moderate fee for his attendance or his operation, with the additional understanding that if he permits his case to be demonstrated in teaching, this service, on his part, will be counted as making up the balance of the fee required by the hospital and the expert? By such an arrangement, all the objectionable element of charity would be eliminated from the situation, and the patient of small means could secure all the advantages of modern clinical skill if he chose to avail himself of them.

This is one way of remedying the situation. Another way is the plan described in our editorial pages in October—for physicians to group together and act in concert. Surely, in every community of any size there can be found a number of men engaged in special lines of practice who would be willing to co-operate for the benefit of the patient with moderate means, without loss to themselves or hardship to the patient.

IS AGE A PREVENTABLE DISEASE?

The man who questions popular beliefs is a hero and deserves the plaudits of his fellows. While their associates exclaimed against the impiety of those audacious spirits who first asserted that natural phenomena, such as lightning and storms, were not manifestations of divine anger, that arrow-heads were not thunderstones, and that sea-shells found on mountain tops were not created there, but evidenced the one-time presence of the sea, they stirred the slumberous depths of human thought and set the world moving forward.

Our gratitude is due to Metchnikoff, in that he, among the first, questioned the inevitableness of senility and asserted that it, like other diseases, might be prevented. Whether the Bulgarian bacillus be really an effective agent in this work, is of less moment than the impetus he gave to investigation along a road hitherto believed to be closed.

A century and a half ago, a great Dutch physician—Hufeland—published a work on the art of prolonging life. Hufeland is almost forgotten now, his name lingering only as a purloined disguise for a brand of bad whisky

spoiled by some bitter ingredient; but he was the foremost savant of his time. His book was translated, a century later, by Erasmus Wilson, who then found nothing that could be added to it, with advantage.

In *The Medical Summary*, Doctor Terry, ex-surgeon general of the New York State National Guard, contributes an article that may be taken as expressing the current views on this topic. Terry prescribes a morning hot bath, with massage, "unloading the tissues of the structural changes incident to metamorphosis"; then a quarter-hour of calisthenics; two bowel movements; rise immediately on awaking; prevent arteriosclerosis by avoiding overfeeding, balancing supply and demand; diet suited to the needs in quantity and quality. The bodily requirements should be met by a diet of fruits, cereals, vegetables, nuts, and sea-food; excluding red meats, beef, sweetbreads, pork, ham, and sausage. He does not place milk in either list, but we presume it should be permitted; and, if so, taken in any form that is most palatable, with preference for the sour varieties—buttermilk and clabber, leaving the *bacillus Bulgaricus* for debate. The system has its value, but does not seem to reach the merits of the question.

Metchnikoff's proposition embraced two points—the dependence of the changes incident to age upon intestinal toxemia due to specific microorganisms, and the opposition to these waged successfully by the *bacillus bulgaricus*. To a certain extent, we feel disposed to consider the former as probable, the latter as possible. But we do not accept the idea that this covers the entire ground, nor that autotoxemia accounts for all the phenomena of age.

Take the mechanism of the condition known to us as sclerosis or cirrhosis: we have the afflux of blood following exercise, inducing an exaltation of the functional activity of the specific cellular elements of the part, as we see in the stomach after taking alcohol. But no irritant can make a cell; and the development of any tissue by exercise has its limits. The muscles of the athlete develop just so far, while continued effort only results in spurious hypertrophy, the hyperplasia of the connective-tissue elements. But this is not limited to the athlete or the blacksmith, it goes on in every human being; and, as age advances, his muscular tissue is gradually replaced by the worthless connective tissue.

After a stroke of hemiplegia, it is the leg that soonest regains power; the arm later and less perfectly. This is because we must,

and do, use the leg-muscles, while we are apt to favor the arm, so that adhesions are likely to form; and we have heard these giving way as a masseur manipulated the limb. No matter how little we use our arms, we call on our leg-muscles constantly; and the result is, that, as age advances, it is the legs that first weaken, the arms being compelled to aid them by the use of a cane. The resulting condition is fibrosis, hyperplasia of the sarcolemma, and atrophy of the muscle-fibers. This is the enemy we should seek to cope with.

Have we a remedy?

The nearest we have as yet is thiosinamin, which, with massage, has certainly some effect in inducing dissolution of redundant, adventitious connective tissue. Whether this can be applied here, is a matter for experimental investigation. But, even so, it does not restore the lost fibers; so that its application, to be effective, should precede the atrophy.

Nothing is worse than advice to take much exercise—this is precisely the thing that must hasten the aging-process. It is rest and conservation of the remaining muscular tissue that are indicated. Instead of long walks, let the exercise take some such form as sawing wood, which brings into action the arms, back, and especially the abdominal muscles, which latter are scarcely ever given as much work as they need.

This matter of proscribing red meats has been carried too far. Now we learn that pellagra may be ascribed to the absence from the diet of these proteins. When shall we ever learn to be moderate and sensible? that *in medio tutissimus ibis*? that when we empty the bath we need not spill the baby?

Moderation in the use of nitrogenous foods is wise, and, as we lay aside the more active habits of youth, we may well limit such foods commensurately. But limitation does not signify total abstention; and common sense is a better guide than extremism.

Again we return to the admonition, to study our vegetable *materia medica* with the aid of modern methods. The detection of radioactivity in the Saratoga waters has furnished an explanation of their popularity, for which the analysis of their mineral content failed to account. The separation of hyoscyne therapeutically from atropine is an advance comparable to the distinction between scarlatina and morbilli. The really scientific study of the active principles of plants has scarcely begun; and who can estimate or limit the discoveries that wait in this field?



PHOTO: UNDERWOOD AND UNDERWOOD

TEACHING WOUNDED SOLDIERS TO USE MAIMED MEMBERS

ALL KINDS OF INGENIOUS METHODS AND APPARATUS ARE EMPLOYED BY THE GERMANS TO REEDUCATE IMPAIRED MUSCLES AND CRIPPLED LIMBS. "FANCY WORK" IS FOUND OF GREAT VALUE



PHOTO: INTERNATIONAL NEWS SERVICE

RUSSIAN WOUNDED LEAVING WARSAW

DURING THE RETREAT FROM WARSAW, THOUSANDS OF WOUNDED RUSSIAN SOLDIERS WERE CARRIED TO PLACES OF SAFETY IN PEASANTS' CARTS OR OTHER EXTEMPORIZED VEHICLES, AS SHOWN HERE

Leading Articles

What We May Learn from the Great War

By IRA S. WILE, M. D., New York City

Editor of "The Medical Review of Reviews"

EDITORIAL NOTE.—*All eyes are turned to the East. Even in prosperous, contented, war-free America, we realize that the world is undergoing a great change, the meaning of which we cannot yet understand. In the unfolding of this great drama of the nations, physicians are more interested than most classes of people. Because this is so, we believe that every reader of "Clinical Medicine" will find stimulus in Doctor Wile's splendid interpretation of the meaning of the great struggle.*

THE uneven veneer of civilization is badly cracked. Through warps and strains one may see the coarse grain of the props of European society. Beneath the gloss of literature, art, sculpture, painting, education, and industrial development is revealed man, in all his primal strength and glory. The physical attributes of mankind stand resplendent beyond the control of the restraining forces making for mental and moral development.

The goal of mankind has not been determined. Shall we learn through this war lessons that, pragmatically speaking, are to make for the betterment of mankind? The role of the prophet is less certain in its meaning than the martial roll of drums. The vigorous onslaughts of personal combat in the name of God, that glorified soldiers of the Middle Ages, have paled into insignificance in the light of the mass destruction characteristic of the man-made war now desolating sixteen nations. The brawn and brutality of the cave man has been intensified in the destructive forces working in this prolonged campaign of devastation. The saber, the bayonet, the sword, and the lance are secondary instrumentalities of war compared with the machine-guns, shells, and shrapnel.

The obsolescent cavalry and infantry warred on the earth. The lessons of this modern war must be sought in the deadly submarine, in the graceful and incendiary Zeppelins and armed aeroplanes and in the subterranean activities in the trenches. The ballista and battering-ram appear trivial devices now that cordite, melinite, and lyddite shriek through the air in their merciless journey. The Human Harvest, as David Starr Jordan terms it, is being reaped by the irritating, strangling, fear-inspiring chemicals sweeping over the land in a pestilential cloud.

No longer is the mailed hand bearing the deadliest weapon. Man's brain has raised to the n th power the death-dealing devices that make this European war a profound lesson in an infernal catastrophe such as non-combatants far removed from the scenes of strife are unable to grasp, contemplate or understand.

Gone are the wars of individuals. Gone are the chivalry and glamor of mortal combat. Chemistry, physics, geometry, trigonometry, and abstract science have come into their own. The slaying of thousands is the keynote of modern warfare. With military ravages on a colossal scale, with violent devastation, with indefensible destruction, with purposeful cruelties, the military mind conceives the majesty of the triumphal procession of the martial Moloch.

Future wars may devise means of defense against the soul-searing elements now employed. Science and invention, hand in hand, will create more powerful machinery, more deadly missiles and more forms of offense.

Can we learn the lesson of peace from the ashes of Louvain, the bombardment of Freiburg or London? Are songbirds or vultures to be seen on the battlefields of France, Servia, Russia, Austria, and Turkey? Has the horror of war actually horrified? May we learn to think in terms of peacefulness and brotherly love while those bound together by ties of race, religion, and tradition seek to destroy one another? Can terms of peace pervade our sleeping or waking hours, while Teuton, Celt, Slav, Jew, Protestant and Catholic forget their traditions in a storm of passion? Is it true that the dawn of peace is to be made possible by the flood of human blood that has reddened the earth and will nourish the crops for future generations? Some pacifists with a military perspective

would have us learn that the way towards getting peace is through the creation of more horrible and more destructive agencies of war. If it be true that we may learn the ways of peace through the emotional violence resultant from ghastly warfare, with all its goriness and devitalization, it will not have been waged in vain.

In so far as the world is concerned, outside of the commercial advantage to the United States and the crystallization of national feeling into some definite form, the sixteen months of warfare have not redounded to the internal improvement of any nation, nor have we learned anything of paramount importance for the upbuilding of the future race. We have learned that war does indeed bring desolation. It clogs the wheels of social progress. It retards the development of the fine arts. It places obstacles in the way of industrial progress. It militates against scientific investigation and research. It is unpropitious for ethical development and opposes the rational development of civilizing agencies. We are taught in no uncertain way that the peaceful quasi-combative strife in the interests of humanity is fraught with events of greater significance than can possibly be attained through demonstrations of military prowess or naval force.

Surgery Has Learned Little in This War

What have our surgeons learned? Practically no new surgical procedures have been devised save for minor technic in connection with the type of wounds that shells and shrapnel have made so plentiful. We have learned that our modern surgery, with the splendid asepsis of peace, has failed in the face of military exigencies. According to Asquith, the mortality rate among the wounded has

been 24 percent. Despite the lack of sanitation during the Crimean war, the mortality of the wounded was only 22 percent, while in the Franco-Prussian war the mortality among the German soldiers was but little

over 17 percent. Aseptic surgery has been practically valueless and impossible.

The problems of antiseptic surgery have created more discussion than at any time since the controversies over the pioneer experiments of Lister. Trench warfare means suppurating wounds. Carbolic acid has again come into its own as an antiseptic, even as it has blossomed forth in its state of nitration as destructive picric acid. We have learned more about resisting attacks made with chlorine, bromine, and phosphorus than about withstanding and overcoming that rarity in peace, "gas gangrene."

In fact, in the realm of surgery, we have learned but

little save the corroborative testimony that compound fractures must be conservatively treated and that antitetanic serum is more valuable as a prophylactic than as a curative agent.

To be sure, surgery is not to be blamed for these shortcomings, but rather the negligent, life-disregarding, barbaric custom of permitting the wounded to lie unrescued on the fields of battle until days have passed, or they have dragged their battle-worn bodies to first-aid havens, or some valiant comrade in his temerity has braved the snipers and effected a rescue.

What Has Been Learned in Medicine and Hygiene?

What has medicine learned beyond the fact that oil of chenopodium may be utilized as a substitute for thymol in the treatment of



PHOTO: UNDERWOOD & UNDERWOOD

DR. RICHARD P. STRONG AND DR. EDWARD RYAN

Doctor Strong is the American who "cleaned up" Serbia. He was sent to that country by the American Red Cross to rid it of typhus, and with his efficient American staff he succeeded wonderfully. Doctor Ryan was head of the splendid American Hospital in Belgrade.



PHOTO: INTERNATIONAL NEWS SERVICE

DR. JAN TUR, IN A RUSSIAN HOSPITAL IN VILNA

THE "HOSPITAL" IS NORMALLY A GIRLS' COLLEGE, BUT, LIKE MOST SUCH INSTITUTIONS, HAS BEEN TURNED OVER TO THE SICK AND WOUNDED

uncinariasis? Practically no great medical advance has been announced. The greatest lesson of this war has been the effectiveness of our modern methods of vaccine therapy. Anticholera inoculations, antityphoid vaccination, antityphus treatment have taken their place in the realm of military prophylaxis along with the routine usefulness of true vaccination, as demonstrated in the Franco-Prussian war.

We have learned to trust and have faith in our medical achievements of the past. We have learned to be thankful for the masterly visioned scientific spirits that create these marvelous agencies for the conservation of life which are no less effective amid the stench and trenches of warfare.

Military hygiene has given us numerous lessons which may be applicable to modern life in times of peace. If huge portable equipments for the maintenance of a pure-water supply are available in war, why may they not be utilized in times of peace, particularly in rural communities, for the prevention of typhoid fever, cholera, and dysentery? If it has been possible to provide

adequate laundries and disinfection plants almost at the battle-line, why cannot sanitarians take advantage of these instrumentalities for improving the hygiene and sanitation in the congested sections in our country?

We have learned anew the conserving influences of modern sanitation and hygiene. It has stood the test far better than had been hoped for, though far from perfection owing to the unfortunate conditions in which its work necessarily had to be accomplished. We have learned again the inherent hazards of vermin and the larger insects, and have found that the fight against lice, flies, mosquitoes, and other blood-thirsty allies of Mars, is worth more thought and an increased expenditure of funds.

In Sociology We Have Learned Much

In social science, valuable lessons are available. Sophocles wisely stated: "War loves to seek its victims in the young." Not alone has the youth of Europe suffered in adolescence and maturity, but the unborn will reflect the results of the debilitating strife

Nations are learning a bitter lesson with reference to their greatest national asset—children. That belligerents have learned their lesson and are realizing the immediate importance of taking steps for the protection of their unborn citizens is evidenced by the elaborate constructive policies now being urged in Germany and England. Nations are interested in promoting the welfare of mothers, encouraging pregnancy by maternity pensions, and are solicitous about welfare-work to offset the diminution of the birth-rate.

The German Society for Bevoelkerungspolitik, and the English society known as the Central Committee for the National Patriotic Organization, are seeking to effect practical economies in human life, leading to the rapid repopulation of their respective countries. The fight against neomalthusianism is just beginning. While in this country the movement for birth control and the limitation of offspring is gaining force on ethical and civic grounds, abroad there is growing an intense desire for children—more children.

We, too, can learn our lesson as to the value of human life. Breeding human derelicts is not to be the basis of our appeal. Military sacrifice is not to be set forth as the ideal to encourage maternity. We must revalue childhood, and question, not alone its purpose, but also our interest in the development of workers, professional men, artisans, and artists who are to help in developing and following the destinies of our country.

Paternalism, Alcoholism, Eugenics

Regardless of the form of political organization, whether republican, monarchical or autocratic, to some degree this war will teach the effectiveness of paternalism. The human derelicts and social wrecks of the belligerent countries, the widows, the orphans, the refugees, the crippled, the blind, the prostrated, and the paupers have become national charges. With personal and national bankruptcy impending or existent, the difficulties of a nation-wide restoration to familial independence presents countless problems.

In its social propaganda and practices, the United States has been and is behind the social-economic standards of the principal contending nations. Possibly we may learn the importance of evaluating the social benefits of some of the existing institutions which form the nucleus for reconstructive policies abroad. We can learn much regarding health insurance, workmen's compensation acts, old-age pensions, and similar institutions that

have scarcely begun to be appreciated in this country.

The crusaders' march in favor of temperance rather than prohibition will be added to, if we can but accept the implied meaning of the restrictions placed upon alcohol among the warring nations. A rational solution of the alcohol problem may be sought and found without the disorganization of society and with manifold advantages to our national life.

Much has been hinted at or expressed with reference to the racial deterioration consequent upon the destruction of so numerous a proportion of the vigorous, alert, and mentally balanced soldiers. It is difficult to prejudge the eugenic consequences, but probably no one will gainsay that the forces of war are dysgenic in action. Time alone will disclose the valuable lesson that is to be taught, but there will be ample opportunity for the study and investigation by those interested in the development of superman.

The Place of Woman in National Life

Politically, we have learned little of the relative advantages or disadvantages of different types of political organization. Absolute monarchies, constitutional monarchies, and republics have each revealed their weaknesses. Regardless of the inherent social, economic, and political characteristics of the belligerent nations, one truth has shone out with particular brightness. The place of women in national life has grown in importance. In civil, industrial, and political life they have been called into action. They are being sought to support their governments, not as non-participants in national affairs, but as part of the backbone of the citizenry.

Man's war is making history for women. Not only have they borne with fortitude and sad, impotent pride the anxieties, sorrows, griefs, and despairs incident to giving up husbands, sons, and fathers to the crushing Juggernaut, but they have rallied to their countries' defense by carrying on its industries and promoting its civil welfare. We have learned in countless ways their strength, their power, their potentialities for national development. May we not recognize therein a new and potent reason for granting them active participation in government?

Even the women's peace congress, an event viewed by many as foolish in the extreme and offering no promise of international good, served for the first time to place a little leaven in national councils, the growth of which has



PHOTO: INTERNATIONAL NEWS SERVICE

WORK FOR WOUNDED SOLDIERS

SIMPLE TASKS ARE GIVEN TO KEEP MINDS BUSY AND ENCOURAGE SKILL OF HAND

been noticeable, so that today a peace idea appears to be struggling for existence in every corner of the globe.

The large number of physicians who volunteered for military life created a dearth of practitioners to attend to the needs of non-combatants. Herein, we have again learned that women physicians are capable, conscientious, and long suffering in performing their medical duties, even though some have sought to indicate that the medico-social sphere of activity is the one for which they are best fitted.

New Opportunities for Physicians

Young American physicians are to have a splendid opportunity for progress and practice if they are ready to take up their habitation in foreign climes. The war has created a serious depletion of the foreign medical schools. Not alone has the professorial class given freely of its life and effort, but even the half-trained student body has plunged into the reddened maelstrom. Among the numerous medical schools of London today the only institution showing an increase of students is the London School of Medicine for Women. The over-production of physicians in the

United States may well be distributed throughout the world in order to maintain a normal balance between the medical and lay portions of the various communities.

It is obvious that educational institutions have suffered internationally. The war will leave foreign nations almost decimated of its greatest teachers. The number of students available for higher education in the arts and sciences will be greatly diminished. The first educational claims of the various nations will be for workers to rebuild the industrial and technical institutions of the country. The problem is being complicated by the necessity of many new types of institutions designed to preserve for national usefulness those now handicapped by blindness, deafness, mental infirmity, or physical disability. From these numerous educational experiments now in course of progress we shall derive many new ideas. By familiarizing ourselves with the details of the new forms of practical instruction devised for the re-education of the handicapped, we shall gain a vast amount of knowledge applicable in our own educational institutions. Our knowledge of methods will be enhanced, the possibilities of our curricula will be enriched, and

the modern public-school system should be wholesomely benefited.

Can We Hope for Universal Brotherhood?

It is not beyond human power to conceive of a time when "nation shall not lift up sword against nation, neither shall they learn war any more." To accomplish this end, a tremendous ethical advance is necessary. It is difficult to believe that with the intensification of racial hatreds under emotional stress, with lowered ethical standards because of prolonged brutalizing influences, an era of brotherhood is soon to be inaugurated. It is true that the solidarity of this country has been developed since the Civil War, but it took almost fifty years to unify the earlier warring factions. The Civil War, however, took place between two sections of the same country, growing up with the same tongue, and the same religious and historical traditions.

With the commercial aspects of the present struggle as an impelling force, and with the various national characteristics suffering under the strain, it will be no small task for nations to grasp again the importance of spiritualizing life. The desecration of ethics is a concomitant of all warfare. From each tragic drama, however, the audience carries new sensations of awakened lofty emotions.

Inasmuch as the great neutral nation has found that it can no longer, in spirit, be free from foreign entanglement, but that its prosperity and internal development is necessarily bound up in the welfare of all other nations, there is some hope that we shall appreciatively foster a spirit of internationalism that will promote universal brotherhood.

By some, war is regarded as a biological process. They see, in it, unrelentless Fate controlling, through cruel processes, the destinies of the world. The aggressive, combative types are to be eliminated through warfare and a non-combative race is to be developed biologically. In addition to the death of the strongest physical types, they foresee the racial deterioration of developing nations so that unethical war may result in the creation of an unwarlike people, ethically non-believers in warfare. This plan of "reversed selection," in the words of Saleeby, may give food for thought, though it calls forth many questions as to the possibility of ethical improvement as one of war's heritages. The unhappy, discouraging thought that must appeal to everyone is that civilization has not civilized unless we regard war as one of the desirable achievements of civilization.

Crile, in his discussion of "A Mechanistic View of War and Peace," wisely notes that our present system of education does not prevent war. Commercial relations, treaties, debt, bankruptcy, poverty, religion, military systems, hunger, fear of wounds and death are insufficient active forces to preclude war. It is patent that some fundamental error exists in our institutions of educational and social training. If it be essential, as Crile suggests, that war patterns of action must give way to peace patterns of action, in order that a dominating thought of peace may integrally pervade mankind, there arises a subject of paramount importance to be investigated, studied, organized, and applied by pacifists.

"There Never Was a Good War or a Bad Peace"

The most vital lesson that we can learn is the thought of Benjamin Franklin, "There never was a good war or a bad peace." There may have been holy wars, there may have been commercial wars, there may have been wars for national honor or national integrity, but the sum total of accomplishments for the benefit of the human race are such that it is doubtful if the world's progress has been due largely to this destructive element.

It is possible to conceive that in the evolution of mankind war was an essential step. For many years, vicious, ruthless competition in industrial life was justified as the very basis of commercial prosperity. Today, however, cooperation, coordination of activities and concerted action, appear to be the dominant note among the wisest industrial organizers. With the ever-increasing population of the earth, we are confronted with countless difficulties which are being solved on the principle of cooperation and mutual understanding.

Must this lesson lose its force when applied to the larger problems of *welt-politik*?

Cannot this country optimistically take the lead in fostering a new spirit of international comity, based upon the doctrine of the brotherhood of man?

Cannot some spiritualizing forces be evolved that will slowly gather strength and become diffused throughout the nations of the world, so that all mankind may join in a thanksgiving chorus? Then we shall hasten the realization of the hope expressed by Tennyson:

Ring out old shapes of foul disease,
Ring out the narrowing lust of gold;
Ring out the thousand wars of old,
Ring in the thousand years of peace.

The Prostate Gland: Its Diseases and Disorders

By WILLIAM J. ROBINSON, M. D., New York City

Editor of "The Critic and Guide" and of "The American Journal of Urology and Sexology"; author of "The Treatment of Sexual Impotence and Other Sexual Disorders"; "The Treatment of Gonorrhea and Its Complications"; "Never-Told Tales," etc.

EDITORIAL NOTE.—Doctor Robinson has promised us a series of articles upon "The Diseases of the Prostate Gland." This is the first of the series, one which deals with a common, everyday disease with which every physician must be familiar, in the trenchant style and the practical manner so characteristic of everything written by Doctor Robinson. This series will be continued for several months.

AN ABNORMAL prostate gland may cause disturbances in the urinary tract, in the sexual sphere, and in the nervous system. The disturbances caused in the urinary sphere have been pretty thoroughly worked out and are well described in special treatises. Much less has been done in the study of the sexual disturbances caused by a disordered prostate gland, and very, very little—at least very little that is of any value—has been done in working out the general nervous and psychic disturbances caused by an abnormal or diseased prostate.

The field of nervous and psychic symptom-complexes that have their origin in the prostate gland has hardly been tilled as yet, but I can assure my readers that it would offer a rich harvest to any intelligent physician who would make a special study of the subject. The manifestations of a diseased prostate are so protean and may be so remote that to him who has not made a study of them the assumption of a causal connection may seem a far-fetched one; yet, he who has had a wide practical experience in genitourinary and sexual disorders and has given the matter special attention entertains no doubt of such a relationship.

Before proceeding with the systematic exposition of the diseases and disorders of the prostate, it will be well to report briefly a few cases of prostatic origin. In some of these patients, the connection with the prostate was not suspected for a long time.

Pruritus Ani the Dominant Symptom

Case 1. Patient, aged 44, married, has two children, never had any venereal disease. For the last nine months, he has been suffering severely from pruritus ani. He has been treated by three different physicians and has used a large variety of ointments and lotions, all affording but temporary relief. The only treatment that seemed to give relief lasting for any length of time was the thorough application of carbolic acid followed by a thorough swabbing with alcohol. Another treatment that gave him relief, but also of only

a temporary character, was, to apply compresses wrung out of water as hot as could be borne. He also received x-ray treatments, but without any benefit. Then I was requested to suggest a remedy, and I advised my favorite in all instances of pruritus ani, namely, painting with a 10-percent solution of silver nitrate. This accomplishes a cure in the vast majority of such cases, but in this instance the relief afforded was but slight and also only temporary.

An examination of the rectum disclosed a uniformly enlarged prostate gland of rather soft texture, but having a hard nodule here and there. Prostatic massage, three times a week, instituted thereupon, accomplished a complete cure in three weeks. The only other treatment given in conjunction with the massage was a hot sitz-bath every night. This was ordered both for its influence upon the pruritus and its direct influence upon the prostate.

That an enlarged or congested prostate gland may cause severe and protracted pruritus ani is well established, but this fact is known to only a few of the medical profession, and I have known many cases of pruritus ani being treated with innumerable applications and ointments, without even an attempt being made to examine the prostate. It would be well for every physician to bear this connection in mind and in intractable cases of pruritus ani to examine the prostate and to administer prostatic massage even if the gland is apparently normal.

A Case of "Lumbago"

Case 2. Mechanic, 30 years of age, single, no venereal history, excellent appetite, bowels regular, generally in good health. For the past eight months, he has been suffering off and on with "lumbago." The onset was gradual, but he thought it might have been due to contracting a cold or perhaps to overstrain at his work. He had used various liniments and ointments, took a number of Turkish baths, and finally had been given sodium salicylate, acetylsalicylic acid, and

even atophan. All these remedies remained without the slightest effect.

A rectal examination disclosed a somewhat enlarged prostate gland, but so extremely sensitive throughout, that, in spite of his robust health, the patient, when examined, fainted away and if not supported would have dropped to the ground. Hot rectal irrigations were ordered to be made twice a day, followed by a suppository of iodoform, morphine and atropine. After ten days of this treatment, prostatic massage was instituted, which the patient bore better and better with each treatment; after two weeks of this treatment, the prostate was practically normal and the "lumbago" was completely gone.

Loss of Sexual Power

Case 3. Lawyer, aged 36, married ten years, has had no venereal disease, in good health in every respect. For the last two years, he has been noticing a gradual weakening of his sexual power, with respect to ejaculation. There was no difficulty whatever about the erections, but the ejaculation-time had been getting gradually shorter, until during the last month or two the ejaculations had occurred almost precipitately, *ante intromissionem*.

Examination disclosed a soft, boggy prostate gland, and on gentle expression a large quantity of prostatic secretion readily exuded. Prostatic treatment, consisting in massage and alternate hot and cold rectal irrigations, resulted in a complete cure in four months. The only other treatment given consisted of instillations of silver-nitrate solution into the prostatic urethra with a Guyon syringe, repeated once a week for the first four weeks. As endoscopic examination revealed a normal condition of the prostatic urethra, these instillations were discontinued.

Sciatica Resulting From Prostatic Trouble

Case 4. A number of cases of sciatica, as the result either of prostatic disease or of too strenuous prostatic massage, have been reported. I have had only one such case. This patient had been subjected to various kinds of treatments. Galvanocautery along the sciatic nerve was applied, numerous ointments containing salicylic acid, oil of wintergreen, oil of mustard, and the like, were rubbed in, and quinine and urea hydrochloride was injected. Relief was obtained, but only temporarily.

An examination of the prostate gland revealed several hard and extremely painful

spots in its left lobe. The right lobe was practically normal. Treatment, consisting of massage of the left lobe, and hot irrigations followed by ichthyol and iodoform suppositories, resulted in a complete cure of the sciatica; and it has not returned for now five years.

A Case of Priapism

Case 5. Patient, aged fifty, has had gonorrhea at three different times, at the ages of eighteen, twenty-five, and thirty-eight years. He had evidently been cured completely, for, during the last twelve years he has had no symptoms of any kind and the urine has been clear, containing no shreds whatever. He is sexually normal, but for the last ten or twelve months he had been annoyed by attacks of priapism when asleep at night. These attacks would awake him, and various methods tried by him, such as walking on a cold floor or dipping the organ in cold water, relieved him only occasionally. Intercourse at such times also was without any effect, the state of priapism remaining practically the same as before coition. Bromides, which he used in very large quantities, on the advice of a local physician, produced no other effect except upsetting his stomach and cause a disagreeable acne on his back and the back of the neck.

The prostate was found enormously enlarged, but only little secretion could be expressed. Treatment directed to the prostate and consisting in massage, hot and cold irrigations, and introduction of iodoform suppositories, resulted in a practically complete cure within a period of three and one-half months.

A Psychic Effect of Prostatic Disease

Case 6. This case is of extreme interest, perhaps as interesting as any I have to report; for, the trouble caused by the prostate gland not only was of a physical character, but seemed to produce a complete change in the patient's psyche.

The patient was forty-six years old and occupied a prominent position in the business world. He was a model citizen and a model husband. His sexual life was as nearly normal as we could find in our modern "civilized" state of society. He never had any venereal disease, had masturbated but moderately and then only for a short time while he was a boy, was married at the age of twenty-four, and lived a normal, moderate life. He practiced neither excessive venery nor undue continence. About two years

previous to my seeing him, he noticed an increase in his libido. While previously he would indulge once a week or once in ten days, he began now to indulge two, three, four times a week. He didn't think there was anything wrong about this, ascribing this increased libido to his better health; but the condition was getting gradually worse, until he began to indulge nightly, and eventually several times during the night. His health began to suffer, he began to feel dull and no longer could attend to his business properly. The demands of his libido, however, were so insistent that he felt he had to satisfy them. The indulgence would give him no satisfaction, but, still, he could not exert sufficient will-power to abstain. Finally he began to look for extramrimonial adventures, something he had not done previously during the entire twenty years' period of married life. His running after women was becoming notorious; the fact became known to his

wife and his business associates, and, though he felt his position keenly, and suffered much from the consciousness of the grief that he was causing his wife, he could not constrain himself. Things were getting scandalous.

I had a number of similar cases to treat and it was not difficult to arrive at the etiologic factor of this patient's change of conduct. His prostate gland was found to be enlarged, congested, and it felt hot and throbbing; the man, however, complained of no objective symptoms relating to the prostate gland. Daily massage of the gland, in connection with cold rectal irrigations, resulted in immediate improvement. Adjuvant treatment consisted in cold baths and in giving large doses of the combined bromides. The man still comes occasionally for treatment, but the life he leads is as normal as it was in previous years.

[To be continued.]

Experiences with Bacterins in Cases of Acne Vulgaris

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IN THIS paper I shall attempt to record my experiences with the use of bacterins, and such additional remedial measures as were necessary, in a number of cases that were referred to me after the usual method of simple bacterination had failed to produce results. I shall attempt to eliminate all cases that seem to belong to similar types, and I trust that the results here reported may assist others in the practical solution of like cases as they are being met in daily practice. The cases were selected as representative types and the actual procedures instituted in their treatment will be recorded. Incidentally, a certain amount of theorizing will be hazarded as to the probable reasons for the initial failures.

Most of the patients were referred by other physicians, owing to unsatisfactory results from bacterination, and I am venturing to account for the seeming large percentage of primary failures. The essential idea, however, is, to show that in suitable cases, by careful regulation and close attention to the patient, combined with a thorough study of the clinical condition (irrespective of the particular infection), results from bacterination are generally satisfactory.

One of the most common pathological conditions that the physician is called upon to treat, and one in which medicinal measures have not been at all encouraging, is acne vulgaris. When bacterination was first proposed for this disorder, it was heralded as a cure-all, and the excellent results reported by a number of observers have led a great many physicians to use bacterins in these cases—sometimes with excellent results, but many times falling far short of what was expected. Consequently, depending upon whether the physician primarily had good results or the reverse, he praised the bacterin-therapy or condemned it.

My experience as a bacteriologist, in examining these cases of acne, leads me to believe that it is exceedingly rare to meet a pure infection with the bacillus acne, if pustules are present. Staphylococci (either staphylococcus albus or the staphylococcus epidermitis albus, or, as some bacteriologists claim, the diplococcus of acne) are practically always present—rarely staphylococcus aureus.

Most manufacturers supply so-called staphylo-acne bacterins, and these should be used in preference to simple acne-bacterins. The usual dose contains from 5 to 10 million

acne-bacilli and from 100 to 200 million staphylococci. These stock bacterins, in many cases, elicit a very favorable response; but often, if the physician depends upon bacterins alone, failure results, as is shown by the following cases.

Acne Depended Upon Intestinal Condition

Case 101. R. J., age eighteen. Mild but persistent pustular acne, involving especially nose, chin, and neck. Very few large comedones on back, many on face. Pustular lesions showed diplococcus of acne only, no acne-bacilli being demonstrable except in the comedones on the back. As a result of a series of stock staphylo-acne injections, this patient apparently recovered. Both physician and patient were very much pleased with the result.

Six weeks after discontinuance of the injections, there was a relapse and there appeared a large number of pustular lesions about the chin and neck. A further course of stock staphylo-acne bacterins did not seem to help as much as did the previous course, the condition did not clear up as well as the first time, further relapses occurred, and the patient continued to have suppurative lesions after the second course of injections was given up, which he did owing to the unsatisfactory progress of the disease. He again suffered a relapse, and his ultimate condition was even worse than before the bacterin-treatment was instituted.

Upon questioning the patient, I found that, following a change of his boarding-place and of occupation from outdoor carpenter-work to inside work at a machine, he was suffering from constipation. At the time I saw him, his bowels had not moved for three days. He also informed me that he had discontinued the diet prescribed by his physician. This, he said, was particularly due to changing his boarding-place, for he was unable now to select his food as he had previously done. Urinalysis showed a high acidity (85,000 units); there was much indican present.

This patient was again referred to his family physician, and a thorough course of cathartics and alkalis was suggested, and instituted, with a low protein diet and staphylo-acne bacterins. The result was that the acne entirely cleared up. There was no relapse for some three months, when he went camping in the woods with several other young men, and then, following dietetic indiscretions (they doing their own cooking), a third relapse occurred. This outbreak, however, did not require the use of bacterins and

cleared up readily after he was advised by his family physician to return to a low proteid diet. It is evident that the gastrointestinal condition in this case was the direct exciting factor in the relapses.

Comedones Must Be Evacuated

Case 41. Young lady, age 28, has had pustular acne for eight years. During this time treatment had been persisted in, though somewhat irregularly—medicinal, mechanical, and electrical—but apparently without satisfactory results. Then followed a course of bacterin-treatment. In all, twenty-five injections were given during a period of six months, with but slight improvement. It is true that the lesions were fewer, but there still remained many old scars and large, congested, indurated hyperemic areas. These were very disfiguring. They rarely pointed or came to a head, but seemed to retrogress and then again, after a period of latency, become active.

Examination disclosed a marked secondary anemia (erythrocytes, 3,500,000; hemoglobin, 68 percent; color-index, 0.9; leukocytes, 10,000). The urine contained a trace of albumin, 65 Grams of total solids, and 18 Grams of urea. There were no casts. For the anemia, iron and arsenic with nuclein were administered hypodermically; boldine, 1-32 grain three times daily; and a mild laxative was continuously administered, sufficient to produce two thorough movements per day.

This treatment was combined with local massage; hot wet-packs each morning. All comedones were removed once a week, and as many of the indurated lesions as possible without producing too much "disfigurement" (as the young lady expressed it) were opened.

These deep-seated indurated lesions that did not tend to point are characteristic of many cases of acne. If they are incised and the incision is carried deep enough, pus will be found; and careful examination of the pus will show that there is always present a comedo. This comedo is not in communication with the surface. The lesions are very deep—one-fourth of an inch or more beneath the surface. They are very hard and firm to the touch, indicating a marked induration surrounded by an area of congestion, and show as slightly elevated red blotches upon the face. These lesions tend to retrogress to some extent, absorption frequently taking place without the pus being discharged externally; but the irritating comedo, that remains, is a foreign body, and sooner or later will again set up purulent inflammation as the patient's gen-

eral health and resistance falls. It is absolutely necessary that these lesions be deeply incised and the comedo and purulent contents removed.

It has been my custom to use an iridectomy-lancet or a needle for incising these pustules. In addition, ammoniated-mercury ointment, half strength, was applied each night, and again thoroughly removed with soap and hot water in the morning. A diet consisting largely of fruits and vegetables, combined with the liberal use of buttermilk, was advised. Stock staphylo-acne bacterins were given, beginning with 10 million acne-bacilli, which was increased to 50 million, a dose being given seventy-two hours after the reaction of the previous dose had subsided.

The hyperemia and indurated lesions showed a marked improvement within three weeks and after four months the patient was discharged, as no evidence of acute inflammation was to be noted. There were, however, many scars showing some evidence of induration and congestion. There was no evidence of active disease. At that time the albumin had entirely disappeared from the urine; total solids amounted to 70 Grams; urea, 30 Grams per day; erythrocytes increased to 4,350,000; hemoglobin, 88 percent; color-index, approximately 1.0; leukocytes, increased to 14,000.

This patient has been seen lately (some nine months after this treatment) and there has been no return, no evidence of active disease. There is some further slight improvement of the induration and congestion, but the scars and pits necessarily will always remain. I believe that the medicinal and surgical treatment, in addition to the bacterins, were the essentials in this case.

Slight Recurrences a Feature of This Case

Case 97. R. E., male, age 26. Severe pustular acne on the face, especially on the forehead; many large comedones. Trouble of seven years' standing. This patient had had the pustules incised and comedones removed, and was put on a low protein diet. Hot fomentations had been applied each evening; sodium citrate, 30 grains, a day, was given combined with laxatives, and stock staphylo-acne bacterins every seven days. There was a slight improvement after the third week, but this did not continue. Thereafter bacterins were given every fourth day, but no apparent improvement was observed at the end of three months, when, as a result of the patient acquiring paratyphoid fever, he came under my care.

The paratyphoid fever was of a mild type and was differentiated and diagnosed by blood-culture.¹ Staphylo-acne bacterins were advised and given during the entire course of the fever, in combination with an autogenous paratyphoid bacterin. The fever lasted two and one-half weeks. During convalescence, the staphylo-acne bacterins were continued, but the dosage was rapidly increased, with excellent results. Six weeks after beginning with the increased dosage, the face was practically clear.

This patient received at his last injection 110,000,000 acne-bacilli and 1,000,000,000 staphylococcus albus. Whether the diet or the intercurrent paratyphoid fever or the rapidly increased dosage or rest in bed, or all these factors combined, resulted in clearing up this case, I am unable to say, although I believe that we were justified in rapidly increasing the dosage, owing to the fact that the previous treatment, in which this dosage had not been reached, produced only temporary results.

Case 64. Young man, age 19. Severe pustular acne of face, neck, and back; many large comedones, deep indurated pustules. This patient received stock staphylo-acne bacterins for a period of eight months, no other treatment being given. The first few doses apparently produced some benefit; thereafter no change was noted. He was sent to me for an autogenous bacterin. Examination of pus from one of the deep, indurated lesions demonstrated the presence of the staphylococcus albus and acne-bacillus. An autogenous bacterin containing these organisms, combined with dietetic and medicinal measures, proved markedly beneficial. However, we were unable, in the last three months' treatment, to prevent occasional lesions from appearing.

In This Case, a Failure

There seems to be a periodicity about the recurrence—usually every fourth, or, sometimes, eighth week. We had carefully examined this patient's general condition, modified his diet, and even sent him to a hospital for a complete rest, and put him on a milk diet for a week. We also markedly increased the bacterin dose, in fact, to such an extent that 100,000,000 acne-bacilli and 1,000,000,000 staphylococci failed to produce a reaction, but we were still unable to prevent the appearance of a few lesions occasionally. These seemed to appear, though they rarely suppurated, whether bacterin-treatment was being given at the time or not.

Although this case has been markedly improved, we cannot state that we have produced definite results, so far as a cure is concerned, for there still are occurring aborting lesions. We are unable, so far, to determine the exact cause of these occasional slight recurrences. The infection has not changed in character, so far as we were able to determine by bacteriologic examination.

In my experience these chronic cases are very difficult to cure, while acute cases always respond promptly.

Hidden Niduses of Infection Must Be Discovered. Value of Nuclein

Case 66. Dr. J. J., age 34; pustular acne. Has received a course of bacterin-treatment from a brother physician, also has given himself three different courses of stock staphylo-acne bacterins. Examination of the pus showed a pure staphylococcus-aureus infection, no staphylococci albus or acne-bacilli being present.

An autogenous bacterin of staphylococci aureus rapidly relieved the condition, but a relapse occurred after several weeks. An autogenous bacterin was given, when the condition was rapidly relieved; four injections being sufficient. However, two months later, there was another relapse, still showing a staphylococcus-aureus infection. The patient now came to me, and a thorough examination revealed a chronic infection of the antrum of Highmore. Cultures showed the presence of the staphylococcus aureus, pneumobacillus of Friedlander, and streptococcus pyogenes. Several of the teeth, as shown by x-ray examination, had been improperly filled, as a result of which blind abscesses in the upper jaw had formed.

Surgical measures directed to the drainage of the antrum and alveolar abscess, with further bacterin-treatment, were instituted. A bacterin containing pneumobacillus of Friedlander, staphylococcus aureus, and streptococcus pyogenes were given. Since this time the Doctor has completely recovered, has had no relapse, and has markedly improved in health, having gained over 22 pounds in weight.

It is evident in this case that several things were originally at fault. In the first place, the constant source of infection was not located, the source, namely, the alveolar abscesses and infected antrum being overlooked. Consequently, the proper bacterin was not given at first: the patient did not have a staphylococcus-albus and bacillus-acne infection, but a staphylococcus-aureus infec-

tion, this producing pustular acne; which was only one of the manifestations of his disease.

Furunculosis Added to the Acne

This case is very similar to another one, in which the young man was found to have a staphylococcus-aureus infection, which produced pustular acne and at times a furunculosis, involving particularly the neck on the left side. This furunculosis was supposed to have been due to irritation caused by his collar, and affected the left side—the young man sat at a desk and frequently turned his head to the left in order to refer to a ledger.

A stock staphylo-acne bacterin had been used for three months, without apparently influencing the disease more than to a very slight extent. Exercise, proper diet, and local massage had also been instituted, but the disorder continued to progress. Examination of the pus from a furuncle showed a pure staphylococcus-aureus infection. There were staphylococci albus and aureus in the acne lesions on the face; no acne-bacilli could, however, be demonstrated. An autogenous bacterin was prepared and was given, in increasing doses, for a period of nine weeks, without marked benefit. The physician then brought the patient to me again, when I made a blood examination.

Notwithstanding the fact that he had a purulent infection and had been given a staphylococcus bacterin, the leukocyte count was under 8000 per cm.; red blood-corpuscles, 4,600,000; hemoglobin, 98 percent. He did not have a very severe anemia, notwithstanding his long-continued local staphylococcus infection. The man refused further bacterin-treatment, but insisted that something be done for him; in fact, as he expressed it, he was "disgusted" with this method of treatment.

Nuclein Contributes to Success

I then advised the use of nuclein, and, knowing the patient to be somewhat erratic and not easy of control, I advised the doctor to give him 2 Cc. of Lundvall's solution (a 10-percent solution of nuclein) subcutaneously (abdomen). The physician did so, and two hours later I was called, as the man, as he expressed it, was in "agony" and had had a chill. There was no temperature at the time, but he suffered severe pain, much more severe than is usually produced by nuclein injections, although these are always somewhat painful. Hypodermatic injections of quinine and urea hydrochloride, combined with the

application of compresses of magnesium-sulphate solution to the site of injection, resulted in quieting the patient and relieving the pain.

He refused further treatment, but returned to his family physician some weeks later, at which time it was found that the pustules on the face and lesions on the neck had entirely disappeared. He has had no relapse in the fourteen months which have passed since he received this nuclein solution. Unfortunately, blood examination was not made after Lundvall's solution had been used.

The Lundvall solution was used, because we know definitely that nuclein given hypodermically will increase the number of leukocytes, and this patient had leukopenia. Immunity depends upon the presence of leukocytes. In all cases that recover from pyogenic infections, there is a leukocytosis. In view of the fact that the disease cleared up so rapidly after this injection, and knowing the action of nuclein, I believe that we are justified in attributing the cure, at least in a measure, to the use of the nuclein solution.

What Bacterination Seems to Teach

As a result of my experience with bacterination in cases of acne, it occurs to me that the following facts should always be borne in mind:

In all of these cases there is some underlying pathologic condition which reduces the general vitality or resistance of the patient to an extent sufficient to prevent recovery from the acne infection. While in many of these cases this condition is but slight and a moderate stimulation, such as can be produced by the use of staphylo-acne bacterins, alone is sufficient to cause the patient to recover, owing to the fact that he is not overwhelmed by some other pathologic condition, his cells are capable of reacting to the stimulation produced by the bacterins. But in all cases it is essential to treat the patient as an entity, irrespective of the fact that he has acne vulgaris, and to determine, if possible, from what other pathologic condition or functional derangement he may be suffering and as a result of which he does not entirely recover from his acne, either naturally or from simple bacterination.

Again, we should keep in mind that, while bacterin-medication always produces a leukocytosis, and the leukocytes are absolutely essential to recovery, there are certain cases in which this leukocytic response does not occur. Indeed, I am certain that, if we made

leukocyte counts in all of these cases, we should find a large number that do not properly react, so far as leukocytosis is concerned, to bacterin injections.

These patients must receive additional stimulation. This may be obtained by means of salicylic acid, pilocarpine or nuclein. In my hands, the best results have been obtained with nuclein. Further, the injection of a bacterin, provided the patient's cells are capable of reacting to the stimulant thus introduced, results in the production of *specific* antibodies. Therefore, it is absolutely essential that the proper bacterin be given. This explains many cases that are benefited by autogenous vaccines after the failure of stock vaccines.

Points About Staphylo-Bacterins

For the staphylococci, there is not a marked differentiation, a staphylococcus-aureus stock bacterin practically always giving results in staphylococcus-aureus infections and to some slight extent even in staphylococcus-albus infections; but, in the case of the streptococcus, the colon-bacillus, as also some other organisms, there are so many varieties that failure occasionally results from the stock bacterins, owing to the fact that a given stock bacterin does not contain the particular variety of organism from which the patient suffers. For example, it is possible that, in a streptococcus-*viridans* infection, streptococcus-pyogenes bacterins will not be as beneficial as streptococcus-*viridans* bacterins. This fact manufacturers of stock bacterins aim to obviate in a measure by the combining of as many diverse strains as possible—in the so-called polyvalent bacterin.

Further, bacterins are only a stimulant to the patient's cells, and, even if the patient's cells have responded by the production of antibodies, unless these antibodies can be brought into intimate contact with the infecting organisms, there will be no effect upon the disease.

Surgical measures directed to the correction of deformities and removal of foreign bodies, purulent discharges, and so on, are absolutely essential. Infected foreign bodies must be removed, otherwise the patient will not recover, irrespective of whether bacterins are used or not. All sources of irritation should be removed.

If we are aware that, when we inject bacterins, we are injecting toxin, or poison, with a view to stimulating the patient's cells to produce antitoxin, we are not at all consistent if at the same time we fail to attempt to place

the patient in the best possible condition, so that he may be able to take care of this additional poison. Many a time a physician injects bacterins into a patient whose cells are already overwhelmed by toxic bodies,

and in this way is doing actual harm—is adding fuel to the fire—is not giving the patient a fair opportunity to obtain benefit. And this I believe to be a very frequent cause of failure.

Some Remarks About *Endamoeba Buccalis*

By DR. KARL ELANDER, Goteborg, Sweden

HAVING made the treatment of alveolar pyorrhea a specialty for about fifteen years, it naturally was with great interest that I learned of the theory lately advanced by Barrett, according to which a species of ameba (*endamoeba buccalis*) is the cause of this affection; and now, after having studied a large number of such cases microscopically, I am very much inclined to support this view.

The probability that the ameba is, in all instances, the most prominent factor in producing alveolar pyorrhea is confirmed, not only by the unanimous opinion regarding the constant presence of this parasite in the pus-pockets around the teeth, but also by the therapeutic effect of an amebicide, notably emetine. Other circumstances pointing to the amebas as the causative factor are, for instance, that the disease progresses only in one direction, namely, apically, so that the atrophying process of the periodont proceeds gradually, and is followed by a secondary atrophy of the alveolar bone; whereas, the gingival lesion is cured spontaneously, to a certain extent, the gingival wall of the pocket acquiring an epithelial membrane of the same kind as the gum.

This proves that the disease progresses gradually toward the apex and that the lesion always is located between the border of the epithelial membrane and the sound periodont; that is to say, the exact spot where we find the amebas in any considerable number. Another proof of the fact that the disease undoubtedly is strictly located in the periodont is, that the patient's health always returns when the affected teeth are extracted. So, also, health is restored when the extracted tooth is replanted after first having been thoroughly cleaned. All writers agree that this latter procedure cures the disease, although there seem to be differences of opinion regarding the prognosis with regard to the replanted tooth. Inasmuch as both the extraction and the replantation frees the subject of pyorrhea, this result must follow because something has been removed in

either case; and that is the diseased periodont. Consequently, the latter must be the real seat of the disease.

The tendency of the disease, to advance in only one instead of extending in every direction (as, for instance, in an abscess), has an analogy in the behavior of the entameba of tropical dysentery. Regarding the latter, Hoppe-Seyler says: "The amebas intruding into the mucous membrane, produce soon, now here now there, epithelial necrosis. They seem to give off a poison which kills the cells. They then advance farther, both in the blood and the lymph, to the base of the mucosa. Great swelling and necrosis follow, forming thick knots, which afterward are destroyed and emptied into the intestine, leaving a deep ulceration."

In studying the living entameba, I have found the electric current of great assistance. The ameba we know to be rather shortlived outside the periodont, and Barrett and others, therefore, have recommended warming the saline solution and the slide to about body-temperature, so as to give the protozoon the best conditions. This is a rather difficult procedure, as the slide and the liquid will be cool in a few moments; and then the ameba, even if still living, is sluggish or motionless. I have, therefore, tried to stimulate the parasite by means of electricity, and have found that it is quite sensitive to a very weak current.

Two platinum electrodes are fixed on the table of the microscope, so that by means of a light spring they are made to press upon the slide on each side of the coverglass. The amebas are suspended in normal saline solution and a cotton pellet, moistened with the same solution, is placed on each electrode and touching the border of the coverglass. The electrodes are connected to an ordinary cataphoresis-apparatus and the current gradually turned on.

I have not observed electrotropism, but when the current amounts to more than one milliampere, the formation of pseudopods

can be seen quite distinctly. If the current increases to 4 milliamperes, the amebas are killed in a short time. Their pseudopods are then retracted and the amebas assume a roundish shape, suddenly evanish. I am still studying the influence of the current on

the ameba, and shall report any further observations later on. In the meantime, I presume, it may be of interest to others studying the amebas to be apprised that the electric current is of great help in promoting the amebic movements.

Adventures of a Frontier Doctor

No. 1. THE CATTLE RUSTLERS

By CHARLES STUART MOODY, M. D., Hope, Idaho

EDITORIAL NOTE.—A frontier doctor has many unusual experiences. Doctor Moody has had his full share, and some of these he will tell you about in the story following and others to appear in succeeding issues of this magazine. No reader of "Clinical Medicine" should miss a single one of these "Adventures."

WE ARE taught and we read that matters communicated to us in professional confidence are not to be revealed except upon the consent of the person concerned, but I have often wondered how many times the ends of justice have been thwarted by this rule. One incident in my own career, which happened many years ago, will serve as an illustration.

Older residents of north Idaho will recall a band of cattle rustlers that some twenty years and more ago operated in the region north of the Salmon River. This band was thoroughly organized, and so bold did they become in their raids that they did not hesitate to descend upon a herd of fat cattle in broad daylight and make way with them, running them across the river, and concealing them there in some out of the way canyon until the excitement had died out; then the brands were changed and the cattle marketed at some railway station in eastern Oregon.

This band continued its depredations for several years without any of its members being apprehended; although it was an open secret that they were under the protection of the local authorities and that their identity was well known to the sheriff and his men. At last, however, their activities became so pronounced that the cattle-men themselves decided to take the matter in hand. To this end, a secret meeting was held and a patrol of "cow-punchers" was organized—men who had a strong predisposition to shoot first and ask all necessary questions afterward. These men were detailed to watch the different herds of cattle; and so secretly was the plan carried out that neither the rustlers nor the sheriff and his aids were cognizant of it.

In less than three weeks after the secret patrol had been organized, the rustlers de-

scended upon a bunch of fat steers that were just ready for the market. In the battle that followed, one of the rustlers was badly wounded; the band, however, managed to make its escape in the darkness, the trail being lost somewhere among the rocks on the banks of the Clearwater River.

A Midnight Call

It was along toward midnight on the 24th of October, the period of the autumn rains, and it was raining as it can rain only along the Clearwater when the conditions are just right. I had gone to bed, thankful that no ailing mortal was in need of my services on such a night, and had fallen tranquilly asleep, dreaming perhaps of a heavenly time when country doctors no more will have to roll out of their warm beds in the dead of night, when a knock sounded on the door. I crawled out and went to the door, but could see no one. As I was about to close the door again, I heard a voice out of the darkness, saying, "Doctor, dress and come over to your office."

I donned my clothing, threw on a raincoat and walked over to the office, located only a few steps away.

No one was to be seen upon my reaching the office. I unlocked the door, stepped inside and made a light; then, as I turned, I was surprised to face a man who wore a black mask and held in his hand a large and decidedly competent-looking revolver. Evidently this unpleasant stranger had stealthily entered the place after me. I fancied I could see the fellow smile behind his mask at my start of surprise upon beholding the apparition.

"Do not be alarmed, doctor," the man said, "no harm will befall you if you obey

orders. Get together such things as you may need to perform a surgical operation and come with me."

"Where to?" I asked.

"That you probably will never learn; but, should you ever find out, it will be better for you to keep that information to yourself."

"What if I should refuse to accompany you upon such terms?" I asked further.

"Do you think that you will refuse?" he asked.

Candidly, I did not think so. There seemed to be such a convincing air of finality about the unwavering directness of that revolver that I deemed it advisable just then to enter into the humor of the thing and to accede to the whims of the man who held it.

I hastily packed my emergency-kit the while my unbidden guest's eyes were on me and soon announced myself ready for the journey.

My guide led me to where two horses were tied beneath a tree, and one of them, I was startled to discover, was my own saddle-animal. Thus, then, the persons who required my services were, at least, acquainted with the surroundings, else the man would not have known where to find my horse and saddle. Without a word, we unleashed, mounted, and proceeded to ride down the river-trail. Presently my guide halted, produced a black silk handkerchief and said, "You now will permit yourself to be blind-folded."

A Ride With a Mask

I submitted as gracefully as possible, the mask being tied over my eyes in such manner that it was impossible for me to see. The man then took the reins of my horse and we resumed our journey.

Although my hands were free, I knew better than to attempt to remove the mask. I tried to guess the direction we were traveling, but could only tell that after an hour's ride we were ascending the steep side of a canyon, and from this I argued that we were winding up from out of the river-bottom. For several hours we toiled up this steep canyon-side in silence. The rain continued to pour, and it was but a short time before I had been drenched to the skin and feeling thoroughly uncomfortable. I attempted to engage my guide in conversation, but these efforts did not meet with success; so, I, too, relapsed into silence as we went on through the dreary night. After what seemed an age, I could see the gray dawn beginning to show through my mask. Then we descended

into what appeared to be a wide mountain-valley or meadow, crossed it, ascended another short hill, and then, at last, our horses came to a halt. My guide dismounted, assisted me to alight, then conducted me into a house.

Shaking with cold and half dead from fatigue, I was led into an inner, warm room and the mask was removed. I found myself in what appeared to be a room in a large log cabin, a bright fire burned in an open fireplace, a lighted lamp stood upon a table, and the table was laid for a meal. When my guide retired from the room, he locked the door after him; and, as there was no window, I found myself effectually imprisoned.

I threw aside my raincoat and basked in the warmth of the fire. In half an hour or so the door opened and a masked woman entered, bearing a tray with my breakfast. She placed the food on the table, then retired as silently as she had come; however, I was hungry and needed no persuasive invitation to sit down and eat. The meal finished, I lighted a cigar and once more seated myself before the blazing fire. Dead tired, I soon was soundly asleep. It must have been nearly 9 o'clock when a man called upon me to follow him, and I was conducted into the living-quarters of the house and there found assembled six persons—two of them women—all masked.

One of the men advanced to where I stood. "Doctor," said he, "you have been called here upon a very delicate mission. One of our number has been accidentally and, we fear, seriously wounded. There is more than one good reason why it is better for you that you should never know where you are or upon whom you are attending; hence, these disguises and the precautions that have been taken in bringing you here. Before entering the sick-room, we must have your promise that you will never make mention of this visit as long as you live in this country, and I may add that your personal safety will depend upon your strictly observing these demands."

I merely bowed in assent.

"If you are ready, we will now visit the patient."

A Wounded Girl—Masked!

We passed into an inner room and there I saw lying upon a couch what, at first look, I thought to be a young man, but closer inspection revealed a young woman, hardly more than a girl. To my surprise, she, too, wore a black mask over her face. The girl

was moaning with pain and it required only a cursory examination to disclose the fact that she was consumed by fever, while a crude surgical dressing covered her left breast. Removing the bandage, I found that her breast had been almost completely torn away by a high-power rifle-ball. Those of you who have had experience with the explosive force of high-power missiles will readily understand that such a bullet, when entering the female breast at its lower internal margin, and passing upward and outward, to emerge near the outer angle of the clavicle, would leave the flesh in a pretty badly lacerated condition. The wound already was several days old and was beginning to show signs of sepsis. I decided at once that, in order to save the young woman's life, it would be necessary to perform what amounted practically to amputation of the breast.

The man who does surgery in the wilds of the Northwest must soon learn to adapt himself to conditions as he finds them, if he would succeed. It was manifestly impossible to get this patient out to where she could have hospital care, and it was equally manifest that unless something were done immediately she was doomed. Without question, I was here confronted by the biggest problem in my professional career, yet, there was no time to withdraw, and there was even less time for hesitation.

I arose from my examination.

"It will be necessary to amputate the lady's breast," I said to those standing expectantly about, "and in order to do so I must administer an anesthetic. I must request you to remove this mask."

"But," protested one of the women, "that will disclose her identity."

"Doubtless," I assented, "but absolutely necessary, nevertheless."

They drew aside and consulted in whispers. Then the same man who had talked with me before approached and spoke: "Doctor, will you give us your promise, upon honor, that should you ever, at any future time, happen to meet this young lady, by no word or look will you reveal the fact that you have met her before?" Assuredly, by this time I was so deeply interested in the case that I was willing to make any promise within reason;

so, when all was prepared to administer the chloroform, one of them removed the mask.

Stepping to the bedside, I looked into the pain-filled dark eyes of a strikingly beautiful young woman, and so indelibly were her features impressed upon my mind that I have not been able to forget them, although



— DR. CHARLES STUART MOODY
Whose "Adventures of a Frontier Doctor" begin in this issue of CLINICAL MEDICINE

years have passed. Necessity compelled me to be my own anesthetist, my own assistant—one learns to do such things in the wilds, if he attempts to do surgery. That was before the days of finished asepsis; still, cleanliness working together with a naturally vigorous young womanhood eventually brought the patient through very well.

I completed my work, then seated myself by the bedside, to await the return of my patient to consciousness. All that day and the day following I sat there and ministered to her, and during that time we became quite friendly, so that, when the shadows of the third night fell, I bade her farewell with a feeling of sincere attachment. No matter what she might be, to me she was a suffering fellow mortal in need of my meager skill. My mysterious guide was ready with the horses and, mounting, we rode away on our long nightly return trip. When half a mile away from the cabin my companion halted, produced the handkerchief, and once more I

permitted myself to be blinded for the journey.

Another long, weary night we rode, my guide leading my horse, as before. Not a word did he utter during that journey. When the new day began to break we had come out upon a highroad. Our horses were halted and my blindfold was removed.

"This," said the guide, "is the old stage-road leading to P—. You have your choice either of going there, which is less than a dozen miles distant, or you may take the road directly home."

I turned my horse's head toward home, the man watching me until I was nearly out of sight around the bend in the road. Then he turned his horse and disappeared into the forest. I reached home safely that afternoon, tired and half-dead from loss of sleep.

The sequel to this incident happened some five years later in the city of L—, not many leagues from my old station in the mountains. We were attending a race-meet in

that city, the guests of friends. It was the day of the ladies' hurdle-race and we were awaiting that event. A young woman, mounted upon a beautiful black Kentucky thoroughbred, rode up to where our group was seated, dismounted, threw the reins over her arm and approached. I glanced at her and could scarcely restrain my start of surprise—it was my mysterious patient of the mountain-cabin.

My hostess turned to me: "Doctor Moody, permit me to introduce Miss K—, whom we hope to see carry off the honors today in the hurdles."

The young lady frankly extended her hand: "I am very pleased to meet you, doctor," she said. "We have never met before, have we?"

"I am quite sure I have never had that pleasure." I took her hand and looked her squarely in the eyes.

I lied like a gentleman—a doctor often has to.

Corporation Surgery

How the "Company Doctor" Handles Emergency Work

By SAMUEL C. BEACH, M. D., Chicago, Illinois

EDITORIAL NOTE.—In this introductory article, Doctor Beach suggests the highly practical character of the material to follow in succeeding papers, in which he will take up, one by one, the everyday emergencies which must be dealt with in corporation practice. The "company doctor" has this branch of practice down to a science and can give information of the utmost value to the general practitioner. Read this article carefully—and be on the lookout for the next one.

ANY work, however important and necessary it may be, is deprived of half its usefulness when it is not systematized. No matter how carefully and nicely a surgeon may do his work, the result, gratifying though it may be both to surgeon and patient, is rendered doubly valuable by careful recording and classifying. Doing this, at the end of a period of years, one has tabulated records to which instant reference may be made and exact conclusions reached—a result obtainable in no other way, and as gratifying to the surgeon as it is valuable to his associates and those to whom he is directly responsible.

Not all men are gifted with the ability to arrange and classify; the dull routine of business does not appeal to them, their education has not prepared them for this detail work, and their brains refuse to move along new and unaccustomed grooves.

But, it is along just these lines that the exigencies of big business demand of its servants that they shall move, and many

costly trials have been made to find men who, in addition to the highest grade of technical surgical skill, possessed also the rare ability to direct and care for business details entirely outside the province of a surgeon.

Little by little, by a slow process of "feeling out," by repeated careful trial and investigation, a class of surgeons has been evolved who are exactly fitted to the duties of such a position; and it is with these men—who may be termed corporation-surgeons—and their work that this article is intended to deal.

Corporations Developing New Surgery

Inasmuch as the great corporations are responsible for many great advances in methods, both commercial and social, they are largely to be credited with this advance. So, too, these large concerns must be given credit for the origin of a new class of surgeons—men who are gifted with technical skill of the highest order combined with a business ability and diplomacy that is rare in disciples of Aesculapius, yet which in

these days is recognized as an absolutely integral factor of success.

It seems to be the usual and inevitable result of an education in medicine that a man thinks, feels, and acts only along professional grooves, rendering him utterly unable to cerebrate along business lines. The exceptions to this rule are remarkably few and will explain why there are comparatively few wealthy physicians, and such a vast army of only fairly financed and even poor men in the profession.

The Requirements for Success

The corporation singles out and engages the surgeon of proven professional and business skill—one who also must have the rare ability to associate diplomatically with all classes and grades of men, from the humblest "hunkey" to the urbane, polished attending man. More of a commendatory nature might be said about the corporation-surgeon, but the foregoing will serve to indicate what he is and to show the qualities necessary to the fulfillment of the duties of the position.

The question now naturally arises, "What are the duties which require such unusual and diversified skill?" Well, it is the object of this paper to set forth a nebulous picture, a faint shadowy concept of a few of these duties; for, naturally, it would be an utter impossibility to enumerate them all, since they are not as yet known, new situations arising every day, that require instant and trained decisions, and the result of which will form the precedent for future incidents of a similar nature.

"Oh," you will say, "I have the same factors arising in my work every day."

Yes, my dear doctor, all very true, but your decision and judgment are based on your professional training of years past; the corporation-surgeon, on the other hand, bases his decision, not only on professional training, but on a firm knowledge of the legal relations existing between employer and employee, on the man's future usefulness as a corporation-unit, on the mental caliber of the patient, on his social and domestic environment, and even more—for, in every decision the corporation-surgeon must bear in mind that his action must subserve the highest interests both of employer and employee, and that his decision will be subjected to the cold white searchlight of trained business minds, while he, and he alone, will be held strictly accountable for the outcome.

It is not of recent growth, this great work—some concerns have been caring for their employees for twenty years, and today all realize the importance of careful systematic methods designed to produce the highest efficiency in results.

The manner in which this work should be carried on has been subjected to many changes, all details of which had to subserve business expediency; and they have been determined by the circumstances arising from individual cases or classes of cases.

The foundation of the whole structure is, of course, good surgery, and this is the *sine qua non* that stands preeminent. An obstacle soon arose, however, in the discovery that, although a good surgeon, a given man was not qualified in other ways to cope with the needs of the position. This necessitated change, and it was only by repeated trials and experiments that the right men eventually were found. Once found, though—ah, that surgeon held a lifetime position and, in due time, had his assistants, who, in turn, were trained to the way they should go, or, having proven unsatisfactory, were dropped from the service.

It will be interesting to note the remarkable changes which have taken place as a result of repeated changes in methods used—all with the same end in view and yet, so different in manner of accomplishment. That the matter may be more clearly understood, a pen-picture of the old and the new methods will be given true in every detail and free from exaggeration, so that the reader may grasp the full import of the term "business-expediency," and judge what progress has been made by the application of this factor.

The Old Way in the Shop

For the sake of convenience, the following will be called "the old method"—not that it is so very old, for it has not been many years ago when it was the accepted method, but simply in order to give it a name by which it may later be designated.

Tom Jones was a first-class machinist, and for fifteen years had worked at a lathe, whose busy whirr day after day was music to his ears. It was, indeed, the only music to which Tom had a chance to listen, save possibly the laughter of his children, for wages were not any too high, and Tom, with his family of seven, could not save much; and when the rent was paid and the grocer's bill settled there was not much left, and that bit usually went for little shoes and stockings.

On this particular morning, Tom had some tools to grind on the emery wheel and was busily engaged in this work when suddenly his fellow workmen heard a sharp cry, and, looking to see where it came from, beheld Tom with his hands to his eyes, moaning with pain and rocking back and forth.

"Did it get both eyes, Tom?"

"No, only one, but it's way in deep; and, my God, how it hurts!"

"Come on, man, me and Jerry will take you home and get the doctor for you."

The procession formed, Tom, with his hands covering his injured eye and supported by a friend on either side, in the lead. There were sympathetic headshakes and murmurs as he passed by, and one old man was heard to say, "Too bad, that's the third man in two weeks." But in five minutes after poor Tom had left the shop the interrupted work had been resumed, another man had taken Tom's lathe, and the work went on as though nothing had happened—there was no time for idleness. Arriving at his modest cottage, Tom's wife began weeping bitterly over his misfortune, meanwhile placing cold cloths on the injured eye, by the simple expedient of wringing an old towel, hastily grabbed from a nail behind the door, out of water in the family wash-basin.

"Want me to get old Doc Smith, Tom?"

"Yes, Jerry—and tell him to hurry."

"Sure—I'll get him here in half an hour, if he's home."

But Doctor Smith was not home just then, and it was over two hours before Tom's eye was cared for, the good wife having, during the period of waiting, carefully placed a large bread and milk poultice over the eye, to ease the pain.

When the doctor came he looked carefully at the injured eye and told Tom that he had received a mighty bad injury, and that all he could do was, to keep down inflammation, and, then, if it wasn't better by next day, he'd have to see the eye-doctor and find out what he could do. Needless to say, Tom was not better next day and at last—several days later—went to see the eye-specialist. The latter promptly advised complete enucleation of the eyeball, inasmuch as it was badly infected, sympathetic ophthalmitis even then threatening the other eye.

—And Tom Lost His Eyes

It's the old story, and one that in former days repeated itself over and over—Tom lost both eyes and became dependent on the

community for his support, eventually learning to make brooms and earning a precarious living in that way.

And who paid the bills? Why, Tom did, of course! Didn't Tom get hurt? Wasn't it Tom's eye that had to be operated on? Well, then, why shouldn't Tom pay the bill?

Now, you'll say, "This is a grossly exaggerated story, told for illustrative purposes." No, my dear doctor, it is true in every detail, and not only true, but typical of hundreds of cases under the old régime. There were some few laudable exceptions, when, possibly, the employer paid the man's rent for two months, or three months, "inasmuch as Tom had been working for him for twenty years"; or maybe the employer's wife sent ten dollars' worth of groceries to "help out." But all of this was either open charity or because this particular Tom's employer had a really soft heart. However, it was not the accepted and established plan—all Toms were not treated in that way.

Let it be remembered that people's hearts, in those days, were just as big, just as warm as they are today, but the individual's desire, prompted by his heart, was not able, alone, to let him do all he might wish to do. Besides, if he took care of one man, he should very properly take care of all of his injured men and—well, he could not see his way clear to assume that burden.

The preceding is significant of the times in which it happened and was undoubtedly all that could have been expected under then existing conditions. It must not be thought, as said, that all employers followed this plan, because there were exceptions; but the main fact that stands out clearly is, that there was no settled plan—it rested entirely with the employer and depended altogether on the circumstances surrounding the accident as to what was being done. Many—most—employers did nothing for their disabled workmen; they merely set it down as an "accident," which happened through no fault of theirs, and therefore they were in no way "responsible." Others did, indeed, exert themselves to the uttermost, but only for the time being, entirely forgetting the future of the victim of the accident, his family, and their prospects.

The need of some plan to provide for this contingency was dimly felt, but no one felt strongly enough on the subject to make any attempt at organizing and perfecting a general method that would adequately provide for the care of victims of accidental injuries in discharge of factory and shop duties.

The unfortunate part of it all was, that, where one man was cared for and given such help as was needed, a dozen others were unprovided for, and this soon provoked adverse criticism and dissatisfaction among workingmen. This led to even worse things happening, such as damage suits and legal actions of various sorts. Some factories were even spoken of unfavorably by workmen, who warned their fellows that such and such an employer was "no good," and this resulted in difficulty for many employers in getting men to work for them, often necessitating the payment of an extra large wage in order to fill certain positions. But, again, other factories were victims of unscrupulous artisans, who, for the most trivial injuries, demanded help and assistance for an unwarranted period of time, thus making it doubly hard for a worthy man to get such help as he required.

At last, little by little, a change began to become apparent. First one employer made an advance, then others, profiting by his example and success, followed his lead, and, so, in the course of years, custom so shaped itself that any employer who did not care for his disabled men found himself much disliked, and thus was forced to mend the error of his ways.

The Modern, Better Way

As an example of the improvement which these conditions have undergone the following incident may serve to illustrate:

It is Bill Brown who now is grinding a tool at the emery wheel. Bill Brown, however, has on a pair of heavy goggles, to protect his eyes against the possibility of harm. Despite all his precautions, however, a fragment of the tool flies up and strikes the glass with such force that it cracks it and drives a splinter of the glass into his eye. Bill, startled, cries out, and removing the goggles, which have saved his eyes from a far worse injury, makes his way to the foreman.

"Got something in my eye, Williams."

"That so, Bill? Come on with me, quick."

Bill is led to the first-aid cabinet fixed to the shop-wall and there a piece of sterile gauze is placed over the injured eye and fastened with a gauze bandage. The foreman then conducts Bill to a room, usually in the same or a nearby building, and by the time they reach this place—which is called the hospital—a surgeon who is regularly engaged for this work and does nothing else, takes him in hand. After a careful examination, the surgeon says:

"Too bad—it's a penetrating injury and we shall have to see our eye-man. You'll

have to go with me to the hospital, Bill, for a few days' stay."

So, Bill gets on his coat and, accompanied by the surgeon, steps into a waiting automobile and starts for the hospital. The oculist, who is awaiting them, by means of a slight operation removes the piece of glass.

"About a week, my man, and then you can go back to work."

Bill accordingly stays in the hospital a week and is seen daily by the oculist, and all requirements are attended to. At the termination of the week, he is discharged and goes back to work—with two good eyes, thanks to prompt care and careful attention by the best medical aid money could secure, and all without any expense to him.

What a difference between the experience of Tom Jones and of Bill Brown, of Bill of today and Tom of former years! And all brought about by the constant and irresistible march of progress, spurred onward by that potent, but silent force, public conscience, and fostered by the great enlightener, education. It was to be, and it is. For, so it was decreed. But what of the personal factors concerned in bringing about this change—what have they done and what are they now accomplishing?

How This New Plan Works

These questions are best answered by telling of the general plan which prevails among corporations and the general methods by which this work is handled. This plan varies in different plants and in accordance with the individual views held by the instigators, but in the main facts one plan resembles another very closely.

In the first place, the foremen are called together and instructed to tell the men working under them of the advantage and necessity of reporting at once any and every accident. The foremen do this, because they often have under their control workmen speaking foreign languages, and it is necessary to talk to them in their own tongues. Some of these foremen are wonderful linguists, speaking six and seven languages fluently, while having some knowledge of first-aid surgery as well.

The first-aid cabinet, which is installed, contains bandages, gauze constrictors, simple medicaments for burns, and the like, each and every article plainly designated by number, while a full description of the uses to which it may be put is contained in a pamphlet also placed in the cabinet.

Then a welfare department is organized, usually under full charge of some clever, well-

informed office-man, who knows the workmen and whose special duty it is to keep track of every injured man or woman, from the time anyone is hurt until he resumes work. Many of the companies make a full and complete examination of the applicant for work and keep a record of this examination for future reference, for it occasionally happens that some clever rascal claims permanent disability from an injury received in childhood's happy hours and the claim is paid! Preliminary examination does away with this and is becoming more generally practiced.

Then comes the hub of the wheel, the *sine qua non*, the most important factor in the whole plan—the surgeon. This man must be a thorough master of surgical technic and especially of emergency methods his judgment and trained intelligence must make a decision that is irrevocable, yet, must be tempered with charity and mercy. While, through it all, he must have a keen mental eye on the future, for, if he should amputate when conservative treatment would have been done better for the future welfare of his patient, he has been remiss in his duty and will not hold for long the important post which he occupies. His trained eye and mind must detect instantly the best method of operative procedure and as instantly apply it. And woe unto the unfortunate foreigner who says, “Meester doktor, no can work”; for, malingerers are cast into outer darkness at once.

Immediate Care Imperative

The injured employee is cared for *at once*, remember that. It's a rule that may not be broken, and many a big fellow presents himself shamefacedly before the surgeon when he has received some trivial injury and wonderingly accepts as careful an examination and dressing as if he were badly hurt, only to be told to return again the next day for a

renewal of the dressing. However, the example of one or two cases of septicemia soon convince the workers that the reporting and getting dressed of even the most trivial injury is the right thing to do, so that cases of blood-poisoning are almost unknown in corporation-surgery.

Patients for hospital care and attention are instantly transferred by automobile or ambulance, and if the work is outside the realm of the general surgeon, a special regional surgeon is called to do the operation. It is not a question for conference or consultation: the surgeon has *carte blanche* to do everything for the best interests of his patient; and that, too, at once.

Although it takes an experienced surgeon to operate, it takes a much more experienced surgeon to know when *not* to operate—to know—yes, and to have the courage of his conviction—when to wait and, little by little, carefully trimming and stitching, allowing and assisting nature to do its best, at least to save a useful finger or two, and to experience the intense personal satisfaction of seeing his patient return to his original job and earn a full day's wage. And that is the acme of good surgery. But this can not be taught, except by years of varied experience and the practice of thorough, consistent, cleanly methods of operative procedure.

This, then, is a general view of this great and important branch of surgery, told in general and unbiased terms and based on the personal experience of the writer and of a host of warm friends who are corporation-surgeons all over the United States.

More specific illustrations will be given in later chapters, together with details of the emergency-methods used. These latter, it is believed, will prove of value to the general practitioner as the last word in emergency-surgery.

[To be continued.]



Modern Treatment of Nasal Catarrh

By BURTON HASELTINE, M. D., Chicago, Illinois

AN INVITATION from the editor to write upon the subject of catarrhal deafness has resulted in the selection of this topic for two very practical reasons. First, the treatment of nonsuppurative deafness, in the great majority of cases, implies the problem of dealing with nasopharyngeal catarrh. This reason is well known; the second, however, is less familiar, namely: under modern methods, such conditions are far more amenable to treatment than they were formerly, and that, too, by measures available to the physician in general practice. This does not mean that all forms of nasal disease are easily curable; still, it signifies that, with a little attention to differentiation and a little skill in relatively simple procedures, the physician in general practice can obtain gratifying results in cases that he has been inclined to shun.

Every doctor has occasion to remark upon the frequency with which people otherwise in a normal state of health complain of what they call catarrh. Indeed, there are but few people who when questioned will fail to acknowledge that, at least, they have a mild catarrhal trouble. Usually the particular climate or locality where the individual resides is blamed for the difficulty, as being too high or too low, too near the water or too far away from it. There is probably no habitable part of the globe that is not said, by somebody, to be "bad for the catarrh," and, if Commander Peary were questioned, he no doubt would aver that it was so at 90 degrees north latitude.

What Is Meant By "Catarrh"

When we seek to discover what in the popular mind is the meaning of the word "catarrh," we find that it applies to almost any chronic nasal abnormality, but especially to one accompanied by some form of discharge. This discharge may be anterior or posterior, and it may vary from a nearly normal secretion to the most extreme ozena. Any disturbance of the proper secretory balance, of course, results in unnatural accumulations in the nose, which, with the inevitable infection, produce what the patient calls catarrh.

One hears many speculations as to why so many people "think" they have catarrh; however, no one seems to have hit upon the

very obvious reason, namely: that—it's true that they have.

A very large percentage of adult people do, indeed, suffer from some form of nasal infection, and the neglect of this condition is the cause of more trouble than is generally recognized. Such trouble not only includes obvious local damage, such as deafness and sinus disease, but also toxemia, rheumatism, and gastrointestinal difficulties not so easily traced to their source. No case of self-diagnosed catarrh should be dismissed as trifling before a determination of the amount of actual pathology has been made. This can be done with sufficient accuracy by anyone with a good knowledge of general medicine plus enough special training to make an average rhinological examination.

General Medicinal or Surgical Measures Rarely Cure

It thus becomes a question of differentiation. If the patient's general metabolism is faulty, this must be corrected, whether local measures are employed or not. It is rare, however, to find a nasal infection, other than a luetic one, that will yield to general therapeutic measures alone. Long-established infections and local tissue changes usually make it impossible to eliminate the disease without direct attention to the parts involved. Commonly there are structural abnormalities requiring surgical correction before complete relief is possible. But, there is a large field for local nonsurgical measures, both in cases where operation is not required and as treatment following operation, since it is but rarely possible entirely to cure the disease by means of surgical measures.

The crudity and the futility of ordinary nonsurgical measures directed to the nose is notorious. Everyone appreciates the uselessness of the nasal spray and vaporizer, but many doctors still employ them in a sort of helpless way, just to be doing something.

Much Can Be Done by Simple Procedures

It will be a comfort to such physicians to learn that by the mastery of a few simple procedures and without surgical skill they can accomplish real results in many of these "catarrhal" cases.

To this end, it is essential first of all to make a complete inspection of the interior of



Fig. 1. An anteroposterior view of the head, showing the extent of the tampon vertically, applied as recommended by Dr. Haseltine.

the nose and nasopharynx by means of artificial light and suitable specula. The ability to do this can be acquired by any physician, with little difficulty. In the next place, it is necessary to cleanse the nasal spaces, and this can not be done by the mere spraying of the anterior nares.

The nasopharynx and posterior ethmoid region can be cleansed only with the aid of instruments that will throw solutions into the vault and high into the middle meatus, which receives the drainage from the largest of the accessory cavities.

It must be understood that chronic catarrh never results from pathologic states limited to the nose alone, except in obvious structural deformities. Some of the accessory cavities are usually involved; the most common, of course, being the ethmoid labyrinth.

The Ethmoid Labyrinth the Point of Attack

It is to this region that treatment must chiefly be directed in order that the best results may be obtained. While the treatment is primarily a problem of cleansing and drainage, it is now possible to go further than this and to employ

more active means in combating these infections.

The profession is indebted to Dr. J. I. Dowling, of Albany, New York, for the idea of tamponing the nose with certain solutions that exercise a curative influence upon mucosal infections. Doctor Dowling has conducted an interesting series of experiments to learn the effect of various silver solutions employed in this manner, and has found that a 10-percent solution of argyrol is best adapted for clinical use.

This method has now been regularly used by a considerable number of rhinologists during more than five years, and its value is established beyond question. Not only is it efficacious in the treatment of nasal and tubal infections, but Doctor Dowling has shown it to be applicable in those ophthalmic conditions now known to result from sinus disease.

In view of this wide range of usefulness, together with its simplicity of application, this procedure should be better known among general practitioners. No better description of the manner of proceeding can be given than the following extract from an article published by Doctor Dowling in 1910:

"Essentially, the method of treatment is, to employ intranasal tampons of such length and size as will snugly fit between the middle turbinated body and the septum, and extend



Fig. 2. Partial view of tampon, partially enveloping the ethmoid turbinal.



Fig. 3. Same head as in Fig. 2, but without the tampon.

from the anterior portion of the nose to the choana posteriorly. These tampons should first be saturated with an aqueous solution of argyrol of 40 grains to the ounce. Through capillary attraction, they will deplete the proximate soft tissues and drain the ethmoid cells and other sinuses. In order to drain the maxillary sinuses, the tampons should be placed under the scroll of the middle turbinated body and above the upper part of the inferior turbinated body. However, since the soft tissues are usually greatly engorged and hypertrophied, they in themselves will assist in the capillary attraction, and it frequently is only necessary to place the tampons between the middle turbinated body and septum. The tamponades should be made sufficiently large to be snug, but not so sizable as to occasion pain in their placing. They should remain *in situ* for from ten minutes to half an hour, and very occasionally an hour.

"The primary effect is, irritation of the conjunctivæ, sneezing, and running from the nose. Upon removing the tampons, they will be

found bleached, either in spots or throughout their extent. This is due to the action of certain germs upon the solution employed to saturate the tampons.

"Subsequent to the withdrawal of the tamponades, the nose should be thoroughly douched by means of a compressed air apparatus or through use of postnasal or intranasal douching. Any mild alkaline solution is acceptable for the purpose. The final step of the technic is the use of some bland oil."

Doctors Hubeny and Hartung, of Chicago, have been good enough to make a number of roentgenographs for the writer, showing these tampons in place. In the cases photographed, an inert bismuth paste was added to the solution, for rendering the view clearer.

Figure 1 is an anteroposterior view showing the extent of the tampon vertically. Figure 2 is a lateral view of the tampon partly enveloping the ethmoid turbinal. For comparison, a photograph of the same head, without the tampon, is shown in

Figure 3. Figure 4 is a lateral view of another case, with the tampon placed far back into the posterior ethmoid spaces. In this figure a line is drawn around the area of the tampon. It will be noticed

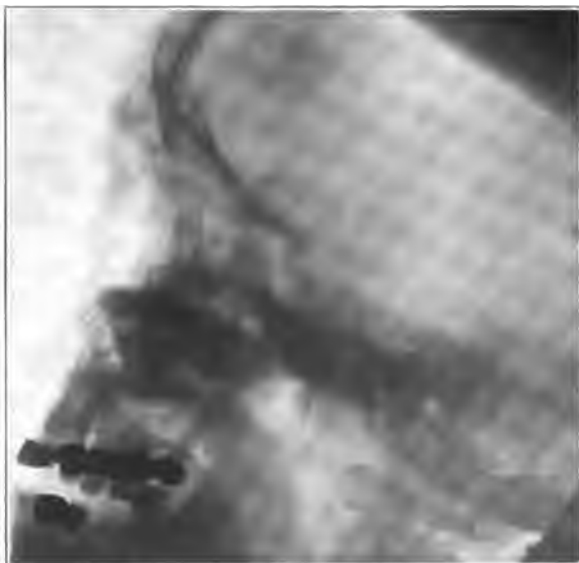


Fig. 4. Lateral view of another head with tampon placed far back into the posterior ethmoid space.

that it extends backward as far as the sphenoid sinus and that its upper portion reaches to the cribiform plate. By comparison of these

photographs with a chart of the intranasal structures, one can form a correct idea of the location.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

Medical Director of The Mudlavia Sanatorium

EDITORIAL NOTE.—We believe that this series of articles (of which this is the first), to be contributed by Doctor Butler, will be one of the most practical and helpful ever offered to the readers of "Clinical Medicine." The Doctor purposes to give just what the general practitioner wants to know in order to treat the "chronics" successfully at home.

THIS is the first of a series of articles which I shall contribute to CLINICAL MEDICINE on "What the General Practitioner Can Do in the Treatment of Chronic Diseases." I know that by writing what I intend to I may perhaps divert a certain amount of business from the sanatorium of which I am medical director, as well as from other similar institutions. But, for a long time I have been convinced that the average general practitioner, by expending a little money in enlarging his office by one or two rooms and installing relatively inexpensive equipment, can treat successfully a large number of chronic diseases, where now he is obliged to send these patients to some sanatorium; thus saving money for his patients, besides enhancing his own reputation and increasing his income.

Every honest physician desires to do the best that he can for every chronic sufferer that consults him; if, however, he does not know how to treat chronic diseases as they should be treated or if he has not the facilities for their proper treatment, he is bound, in all justice to his patients, to refer them to some reliable medical institution where they can be properly treated.

Now, as I have just said, the great majority of these cases the general practitioner can treat himself, provided his office is equipped so that he can give simple hydrotherapeutic and certain electrotherapeutic treatments.

As to electrotherapy, of the various currents, or modalities, being used in medicine at the present time, the following may be mentioned:

- Autocondensation (high-frequency),
- Diathermy (high-frequency),
- Fulguration (high-frequency),
- Spray of Effluve (high-frequency),
- Ozone inhalation (high-frequency),

- Vacuum electrodes (high-frequency),
- Static spark (high-frequency),
- Vibratory massage,
- Pneumo massage,
- Suction,
- X-ray therapy,
- Straight galvanism,
- Surging galvanism,
- Slow sinusoidal current,
- Rapid sinusoidal current,
- Surging sinusoidal current,
- Multiplex sinusoidal current;
- Compressed air,
- Therapeutic light,
- Static electricity (in its several forms).

Now, it is true that not every practitioner who is employing electrotherapeutics in his practice makes use of each and every one of these agencies. Neither is the surgeon employing every one of the thousands of surgical instruments made. From my experience, however, I am firmly convinced that the general practitioner who is anxious to render the best and most modern forms of treatment should include practically all of the aforementioned agencies in his work.

The average "chronic" has, as a rule, taken so many drugs and in such large doses, by the time he reaches the physician who is competent, ready, and willing to apply the proper treatment, that he is in a condition where he needs, for a time, elimination and physiologic or physical measures. Of course, I am not belittling the value of drug-medication, for, the right drugs properly administered, and in the proper dosage, are indispensable. I shall have more to say on the drug-therapy of chronic diseases later.

It is also true that in some instances two or more of the above-mentioned agencies might be used—and are being used—for the treatment of similar conditions, but (to

refute the possible argument, "Why put in two agents for the same treatment?") I can call attention to the fact that there are, for instance, dozens of drugs being used for the treatment of the same disease. Again, there are hundreds of surgical instruments, all of which are devised for one certain operation. In other words, "What is good for Jack is not necessarily good for Jill."

Considering the dollars-and-cents side of this question, is it not true that the average practitioner comes in contact with a case now and then which arouses his professional curiosity, but, to his chagrin and annoyance, the patient comes only once, while, as a general rule, ethics forbids the following up of the case? This is particularly true where the physician writes out a prescription and it is filled at a drugstore. On the other hand, the physician who dispenses his own remedies, and has an office-equipment enabling him to employ the physical modes of treatment, and who personally administers the treatments, will have better control of his patient and be more able to help him than the doctor who merely asks a few questions of his patient and then writes a prescription.

To the physician equipped to treat chronic diseases properly, the patient will return often for subsequent treatments; and, while the charge for each treatment will be more than for an ordinary office-call, it will be worth much more to him, and he is usually glad to pay the difference. Besides, it can readily be seen that the physician, by doing business in this way, can get into closer touch with his patients, to say nothing of increasing his income.

Electrical Equipment Required

Now, to get down to the practical business side of the question, it hardly seems possible, but it is true, nevertheless, that all of the aforementioned physical therapeutic treatments, with the exception of the static currents, can be given if one possesses the following combination x-ray and high-frequency outfits: the Victor No. 4 or No. 7 outfit; the Victor No. 62 combistat; and the Victor therapeutic lamp. The cost of such an equipment (exclusive of the apparatus for static currents) would be in the neighborhood of \$650; this outlay including all the necessary accessories. Such an equipment would place at the disposal of the physician an x-ray apparatus sufficient only for radio-therapeutic treatment of the extremities and for giving superficial treatments, but would not be fitted for heavy radiographic work.

The general physician can see the advantage—or disadvantage, as the case may be—of having diagnostic rays available, such as those yielded by the Victor No. 4 outfit.

In addition to the electrotherapeutic apparatus mentioned above, the physician's office should have at least one electric-light cabinet. Light, air, and water represent hygienic and curative factors of the greatest importance. The process of metabolism is influenced tremendously by light; the body requires light for its health and sustenance. The most vital of physiological processes, respiration, both cutaneous and pulmonary, is directly affected by the presence or absence of light.

The electric-light cabinet enables us to make practical use of the various physical agencies which are included in light. The light of the electric arc has approximately the same spectroscopic composition as sunlight. The light of the incandescent globe is rich in thermic rays. Thus we are prepared to look upon the electric-light cabinet as a valuable addition to our therapeutic armamentarium, combining, as it does, the power of the various rays in the destruction of disease-germs, in the reestablishment and stimulation of physiological metabolism, and in the performance of the many important functions of light in and on the animal-economy.

It would take me beyond the confines of a short résumé to discuss in detail the minute phases of our subject. Suffice it to point out some of the effects which may be produced by the proper use of the light-cabinet.

Uses of the Electric-Light Cabinet

As a producer of copious diaphoresis, the electric-light cabinet rivals the Turkish bath. Winternitz, probably the greatest authority on the subject of thermo- and hydrotherapy, states that since the introduction of the light-cabinet he has practically abandoned all other methods. The light-bath produces sweating, without intense heat. The light-bath is, therefore, indicated in all cases for which other apparatus are adapted. Whenever cutaneous excretion is to be stimulated, the electric-light cabinet will do the work. Either will alter, stimulate, and rectify metabolism promptly. Either will augment absorption, stimulate the appetite, and help the organism to rid itself of all kinds of deleterious gases, vapors, and fluids.

The following statistical list of diseases, with the percentage of cured cases added, is taken from the reports of one of the numerous

German phototherapeutic institutions, and shows the clinical importance of the light-bath more eloquently than any physiological and therapeutic argument could possibly demonstrate it. The cases were all treated in the electric-light bath:

Light, in fact, occupies the position of the universal disinfectant, because without it the purification of river-water would be inconceivable. There is no longer any doubt that the pathogenic bacteria are affected by the light. Geisler exposed a culture of typhoid-

NAME OF DISEASE	No. of Cases	Cured	Much Improved	No Result
Rheumatism.....	116	81	30	5
Gout.....	86	53	33	..
Gout, deformative.....	3	..	2	1
Neurasthenia and hysteria.....	82	45	31	6
Lues.....	64	46	16	2
Obesity.....	62	..	50	12
Asthma.....	49	..	40	9
Gonorrhea and consequent disorders.....	38	20	15	3
Heart disease.....	36	..	36	..
Fatty degeneration of the heart.....	33	20	13	..
Sciatica.....	32	28	3	1

The researches concerning the biologic importance of life in conjunction with the functions of the human organism have, indeed, revealed many interesting facts. It has been shown that relative degrees of light will affect the contractility of protoplasm. The red blood-corpuscles, the direction, speed, and duration of the movements of certain infusoria and diatoms are directly influenced by light. The muscular excitation and activity of frogs has been shown to be much more energetic under the influence of light than in the absence of light. It has been proven that the quantity of coloring matter in the red blood-corpuscles increases and decreases in accordance with the amount

of light to which the animal body is exposed. bacilli to the light of a thousand-candle-power arc-lamp, and after three hours of illumination the growth of the culture had been practically suspended. Aufrecht inoculated various animals with the bacilli of milzbrand, diphtheria, and tuberculosis. The inoculated animals that were kept in the dark died within two or three days; those that were exposed to the light usually resisted the effects of the inoculation. Many other facts could be added to those here mentioned. Those who are interested in the subject will find a great deal of information from the writings of Below, Kattenbracker, Winternitz, Kellogg, Bier, and, above all, the classical writings of Finsen. See table following:

NAME OF DISEASE	No. of Cases	Cured	Much Improved	No Result
Bronchial catarrh and emphysema.....	28	10	18	..
Neuralgia.....	24	6	17	1
Ulcus cruris varicosum.....	23	10	7	6
Stomach and intestinal catarrh.....	20	5	15	..
Mild affections of the liver.....	20	10	7	3
Affections of the knee-joint.....	15	10	5	..
Nephritis.....	15	..	15	..
Lumbago.....	14	14	..	..
Catarrh of the ear, and deafness.....	14	1	9	4
Nasal catarrh, and affection of the larynx....	13	5	8	..
Anemia.....	12	..	12	..
Diabetes.....	10	..	10	..
Headache.....	5	5	..	..
Chronic constipation.....	4	1	3	..
Professional illnesses.....	3	2	1	..
Erysipelas.....	3	3	..	..
Influenza.....	3	3	..	..
Contracted scars.....	2	2	..	..
Ulcus molle.....	1	1	..	..
Skin diseases (herpes, etc.).....	63	24	33	6
Tabes.....	40	..	7	33

of light to which the animal body is exposed.

That light is fatal to bacterial life has been suspected by many observers long before the time of Finsen. As far back as 1870, Es-march exposed his surgical instruments to the rays of the sun for the purpose of disinfection.

Excellent electric-light bath cabinets, large enough for a physician's office, can be purchased at from \$95 to \$150 each.

A hot-air apparatus for the extremities and other regions of the body, and, if possible, a hot-air body-apparatus, should be a

part of the equipment of the office of every up-to-date doctor. Treatment with superheated air is invaluable in many chronic diseases, notably those of the kidney, liver, blood, skin, and joints. The sphere of usefulness of hot-air therapy is daily widening, and the progressive physician will employ this form of treatment wherever it is indicated. Such an outfit for ordinary uses can be procured for \$100, and down to as little as \$15.

In this connection, I would recommend the employment of cups. One who has not resorted to dry- and wetcupping would be astonished were he to see what results, in certain cases, I have obtained by this method. In addition to a set of drycups, I would earnestly advise the purchase of Bier's cupping apparatus for the foot, knee, elbow, hand, and arm. This can be had for \$60 complete (Betz). Of course, it is expected that every physician will have a blood-pressure indicator.

Hydriatic Measures

Now, lastly, the physician should have one room where certain hydrotherapeutic measures could be given; simple measures, such as the application of compresses, lavage, enteroclysis, irrigation of the genitourinary canals, and so on. The general practitioner, however, will employ most of his hydriatic measures in the home of the patient, and the physician himself should be perfectly familiar with the rationale and technic of the various procedures, so that he can give the treatment, or, what is better still, if his practice justifies it, have a competent nurse give the treatments under his direction. The procedures which are of value in the treatment of chronic diseases are the following:

1. Ablution: a useful preliminary to more active hydriatic procedures. In such cases as anemia, chlorosis, phthisis, it is of great value; also in neurasthenic cases which do not require more heroic measures. In the more severe cases, it offers a gradual introduction to the douche and other more active measures.

2. The half-bath is one of the most universal hydriatic procedures we have. In chronic diseases, after, for instance, the wet-pack has produced dilatation of the superficial cutaneous vessels, the half-bath is a necessary sequel for the purpose of maintaining the tone of those vessels.

3. The affusion is an excellent substitute for the douche in chronic diseases, if it is administered with care and precision as to

temperature and the patient's reactive capacity.

4. The drip-sheet, or sheet-bath, is applicable to many chronic ailments, especially as a substitute for the douche, which can be had only in institutions, viz: as a tonic in chlorosis, anemia, and neurasthenia; as a derivative in intestinal catarrhs; as a revulsive and alterative in melancholia, hypochondriasis, neuralgias; and in pulmonary and bronchial diseases.

The flexibility and simplicity of the sheet-bath commend it especially. It is probably the most flexible hydriatic measure known.

5. The cold rub is useful in the anemia of feeble persons, phthisis, and other conditions of defective hematosis.

6. The wet-pack is extremely valuable in all chronic cases in which defective tissue metamorphosis is a prominent element, as in diabetes, rheumatism, gout, some disorders of the digestive apparatus, anemia, and chlorosis. In the functional neuroses, the wet-pack offers a means of allaying irritability and, if succeeded, as it should be, by a half-bath, douche or other active mechanico-hydriatic procedure, it will refresh the nervous system, improve tissue change and the blood-making function, and invigorate the circulation.

7. The wet compress, hot or cold—according to indications—is perhaps more universally employed than any other hydriatic procedure. It will be found useful in many chronic conditions, such as chronic rheumatism, sciatica, lumbago, chronic endocarditis, and in the cardiac neuroses.

8. The hip-bath is indicated in paralysis of the muscular fibers of the bladder and intestines; in prolapsus ani, spermatorrhea, prostaticorrhea, proctitis, hemorrhoids, impotence of men arising from muscular debility, and cutaneous anesthesia; in weakness of the uterine ligaments; prolapsus uteri; leucorrhoea due to chlorosis and menostasis; some forms of passive hemorrhages; liver hyperemia; muscular atony of gastric and intestinal coats, as manifested by constipation, flatulence, and so on.

These are some of the hydriatic measures that are indispensable in the treatment of many of the chronic diseases, and the physician should employ them when indicated, either in his office, if equipped for it, or in the home of the patient. It will behoove every physician who is desirous of successfully treating chronic diseases thoroughly to master the technic of these hydriatic procedures, familiarizing himself with their phys-

iological actions, so that he may intelliently treat his patients at home, instead of sending them to some water-cure establishment, in many of which, moreover, the various hydriatric procedures are anything but scientifically administered.

On the value of hydrotherapy in chronic diseases, we have the testimony of many teachers, among whom is Prof. F. A. Hoffman, of Leipzig, who says: "Cold water is a therapeutic agent by the correct application of which we may most surely, and without danger of reaction, exercise and invigorate the nervous system; and herein I seek its fundamental significance in the treatment of all possible internal diseases. I am convinced that in time all chronic diseases of the organs will be drawn into the domain of the bath-treatment."

I have thus far endeavored to impress upon you the importance of "preparedness," of being fully equipped, not only with the necessary apparatus, but with knowledge, so that you can treat chronic cases successfully at home; for, if you can not treat them successfully yourself, it is your duty, as I have said before, to send your chronic patients to some well-equipped institution where they can be properly treated.

So far as your material equipment is concerned, you can procure all that is necessary for from \$900 to \$1200, and you could make no other investment of such an amount that would yield you so large returns in your practice as will this.

How to Manage Chronic Diseases

Now that we are prepared to take proper care of our chronic patients when they come to us, I will proceed to call your attention to the following important points in the management of chronic diseases, namely:

1. How acute diseases may become chronic;
2. Focal infections as causes of chronic diseases, and how to detect them;
3. The condition of the intestinal canal in chronic diseases, and how to set it right;
4. Regulation of diet, and what is to be accomplished thereby;
5. The importance of elimination by various routes in the treatment of chronic diseases;
6. Exercise, artificial and natural, and how to secure it;
7. Rest and recreation as necessary aids in the treatment;

8. Occupation and habits as contributing factors;

9. The influence of psychotherapy in the treatment of chronic diseases.

How Acute Diseases Become Chronic

The two tendencies, that of chronic disease to assume an acute form and that of acute to continue in a modified form as a chronic ailment play a large part in differentiating remedial procedures. Chronic bronchitis, for instance, following an acute inflammation of the bronchial mucous membrane, a perversion of nutrition, yields but slowly to treatment. The irritant may be some toxin, some peculiar condition of the mucous membrane, or there may be a constitutional condition that keeps up an abnormally active state of nutrition in the membrane over which an inflammatory storm has gone and which has thereby been altered, as in suppressed gout or in syphilis; and the methods to be applied to these cases must accordingly vary from each other and from the normal.

There are two lines of procedure, the first consisting of general measures, and the second, local measures. In all cases of persisting organic changes induced by an acute disease, it is of the greatest importance to employ the constitutional treatment. There seems to be an incapability of effecting perfect repair in an organ that has once been injured. Sometimes a low, persistent cell proliferation will result from mere general debility, notably in the "strumous." Here are indicated warm clothes, good food, care of the general health, and suitable hygienic environment. As nearly perfect physiological rest as can be had for the part is absolutely necessary; for, if exercised, it repairs itself with difficulty or not at all. It is exercise that retards perfect recovery in parts whose functional activity, like that of the kidneys or the valves of the heart, is essential to the continuation of the organism. An attack of chronic nephritis would disappear soon and utterly if the kidneys could be made to cease their work, and mitral disease would occur infrequently if the vela of the mitral valve could be given a complete rest after an attack of acute rheumatism involving the endocardium.

When necessary, as in acute affections of the stomach, nutriment may be injected through the rectum, thus affording rest to the usual channels. In acute cerebral congestion, or meningitis, the brain should be rendered as inactive as possible. Inflamed joints should be forced to rest, and so should a fractured limb. Rest for the body is as neces-

sary in these cases as rest for the nervous system is necessary after a steamboat disaster or a railroad wreck.

Often the repair of some part which has suffered from an acute infection is retarded by some general condition, such as is found in rheumatism, gout, and syphilis. Here, the constitutional states limit the local action, and an unfavorable activity persists. When such a general condition is disclosed and it is found that it is working against the patient's recovery, that general condition should be treated. The very first step toward satisfactory results in such cases is, that we recognize this necessity and treat the constitutional states that lie beneath the persistent local affection. When it happens that the correct treatment has been a matter of accident, as sometimes occurs, the relation of cause to effect is not clear, but in general we attempt to repair an injured organ and restore it to use by the measures already cited.

The immediate object is to aid the recuperative power of the system by inducing the most favorable hygienic conditions; to free the injured part as much as we may from any functional movement that can be dispensed with; to improve the general nutrition; to bring the injured part as closely as possible to a state of complete physiological rest; in short, to induce an equal condition of all the parts, not only in power, but also in function. The existence of the organism is threatened by any lack of balance between one part and the other parts.

Fatty degeneration of the heart, which is sometimes consequent upon disease of the coronary vessels, may attack one who in general is active and strong. Such a person, on account of the ease with which he uses his muscles, is far more prone to force his diseased heart to a fatal point, from sheer adynamy, than a general invalid would be. A similar result may be brought about through aneurism. As no chain can be stronger than its weakest link, the capacity of the elastic arterial system to resist distention by the retained blood is lowered to the point of the capacity of the aneurismal sac. Any increase of blood pressure might rupture the sac, with fatal results.

If any person has advanced renal disease, he is much safer if his appetite is poor and he is thus prevented from taking animal food, especially lean meat. Fortunately, the tastes of such an invalid often run toward nonnitrogenous foods. In the case of elderly people with renal disease, a distinct benefit

arises from loss of appetite, which permits the oxidation of the nitrogenized materials in the body, and these are thereby allowed to escape from the system. Should the normal appetite remain, these would accumulate, and either uremia or some other affection, an outcome of faulty metabolism, would threaten. Not soups, beef-tea, and the like, but soft foods, rest in bed, gruel, tea, and arrowroot are the proper measures here.

Wherever the general condition has no bearing on the injured part, while at the same time the part has important physiological functions, fatal or dangerous results may be expected at any moment. When there is incurable disease in an organ whose functions are important to the body, correcting the habits of the patient should be insisted upon, to the end of securing an equilibrium, reducing the general condition to a balance of all parts, to "level down"; for, this method will at least prolong life. And in convalescence from acute disorders in important organs, the relation of the afflicted part to the whole body must be borne in mind, as well as its capacity, its condition, and the danger inherent in a forgetfulness of these relations. In uremic diarrhea, for example, should the condition of the kidneys be left out of the reckoning and the flow be arrested without reopening the normal passage for the excretion of azotized matter, the result would be almost certainly a general explosion of uremia.

In some systems it is inadvisable to attempt to promote too high a general condition. A chronic affliction, hidden in an important organ, may easily be uncovered and prove fatal, especially when the various viscera are involved. If, in fatty degeneration of the heart or in chronic renal disease, the line of treatment for the disease itself should be followed, without reference to the general conditions of the body, the time will come when the oversight will be sadly deplored. To "level down" and to "level up"—the one is as important at times as the other is at other times.

The tendency of a chronic disease to become acute is a matter of far greater importance than the reverse transition. An acute attack on a serous membrane may arise from a condition of chronic renal disease, the serous inflammation threatening to prove fatal. Now, if the chronic condition could have been treated in such a manner as to prevent the acute form, this danger would have been obviated. It is where the chronic becomes the acute that the great danger exists, and,

unless the situation is understood and provided for, the outbreak may come almost at any time. In a case where a victim of constitutional syphilis became a hemiplegic, from a syphilitic tumor in his cerebrum, it is nearly certain that, had the management of a syphilitic cachexia been adequate, the result would have been averted.

In general paralysis, aortic disease, locomotor ataxia, and in many other chronic diseases, the termination is often by inter-

current pneumonia. When these chronic conditions run into a state so seriously acute, the most skilled treatment is usually of little avail.

The true line of treatment of acute affections arising out of the chronic is that of prevention—they should be “treated” before they exist. To this end, the chronic diseases must be studied—their nature, their course, and their outcome.

(To be continued.)

Ovarian Inflammation

Its Treatment With the High-Frequency Current

By A. S. TUCHLER, M. D., San Francisco, California

THERE is nothing which offers such a prolific field to the surgeon as the pelvic inflammatory conditions, and, yet, if the following electrical methods of treatment are made use of, the major portion of these cases can be cured without resorting to the knife.

In a previous article in *CLINICAL MEDICINE* (June, 1914, page 532), I called attention to the treatment of endometritis, by means of electrolysis, using the direct-current battery. There is nothing in the category of medical science which gives better results in the treatment of these chronic cases than this electrical method. But in the acute cases of an inflammatory state of the organs of the pelvic cavity, such as the ovaries, tubes or uterus, this direct-current electrolysis is absolutely contraindicated. It is here, then, where the application of the high-frequency current can be applied, with astonishing success, in relieving pain, subduing inflammation, and promoting the absorption of the exudates which form as a result of this inflammatory condition. I refer to the Tesla bipolar high-frequency current, which is obtained from the office-cabinet of a high-frequency transformer.

In order to accomplish this result, the current must be of a very high frequency and of a low amperage, so that the electrode may not become too hot and, in consequence, burn the mucosa. The usual high-frequency cabinets on the market are of an extremely high amperage and, consequently, produce a very hot, stinging, burning sensation when the required frequency is developed, so that the insulated glass vaginal electrode can be applied for hardly longer than seven minutes at a time, and this period is not long enough

for obtaining the proper results. I have had the unfortunate accident happen to me, of breaking two insulated vaginal glass electrodes while in the vagina, by using the current from the ordinary high-frequency cabinet, the heat or amperage of which could not be kept under control, nor properly regulated. Nor, for the same reason, can the portable high-frequency machine be used for this purpose.

The high-frequency battery illustrated herewith was, therefore, made so as to obviate such accidents and to obtain the proper results. It will give the very highest frequency, with just enough warmth to be comfortable, in one-half hour's treatment. The amperage of this machine is under perfect control, so that the high-frequency penetration and heat can be regulated to the requirements of the treatment. This, therefore, can be given daily for one-half hour, with resultant relief from pain and, yet, absence of any danger of excoriating the mucous membrane. It is my custom, in conditions in which inflammation, pain, and tenderness are present in the pelvic cavity, in connection with endometritis, to administer the high-frequency current daily until these symptoms are subdued, then to follow with the direct-current intrauterine treatment, or sometimes to give both alternately.

In order to make more clear the above statements, the following observations will illustrate the method employed by me.

Illustrations From Practice

Observation 1. Mrs. H., age twenty-eight, family and personal history good. Five years previous to our becoming acquainted, the lady had had severe pains in

the *right* ovary, as a result of indiscretion during a menstrual period, which always had been a source of annoyance and pain since then. She was advised to undergo an operation for the removal of the tube and ovary, her condition having been diagnosed as an inflammation of these organs, associated with adhesions, the latter the result of this long-standing inflammatory condition. However, she had refused to submit to any operation.

When I first saw the lady, I found that she was suffering excruciating pain in the *left* ovary, and that it was considerably enlarged; she also experienced a sense of fullness in the vaginal vault. The uterus was immovable—on account of the adhesions—it was retroverted, and the cervix was turned upward and pressing against the anterior wall of the vagina and bladder, thereby causing a constant desire to urinate.

The usual indicated remedies to relieve pain, inflammation, and fever were given. Also tampons of 10-percent ichthyol in glycerin were inserted daily in the vagina, and hot applications were made externally. After two weeks of such treatment, the patient was brought to my office daily for the high-frequency treatment.

This current was applied by inserting into the vagina a sterilized glass vaginal insulated electrode up to the tender ovary, and a wet pad was placed externally. These electrodes were connected with the machine, so that this current would penetrate through these organs, the body of the patient not being charged. The glass electrode was attached to the active post of the battery, on top of the resonator, while the moist metal-covered pad was attached to the indifferent post, which was grounded. With this arrangement the patient is not charged, the current being concentrated only where required. The electrodes were placed, on alternate days, on the right and the left side, respectively.

Treatment was given daily for one-half hour, the current being so regulated that only a moderate degree of warmth was felt. After each treatment, a tampon saturated with 10 percent solution of ichthyol in glycerin was inserted in the vagina. The relief of pain was apparent from the start, and after a few treatments she was able to come to the office unassisted. This was continued for three months, when it was found that the organs in the pelvic cavity were in a perfectly normal condition, the uterus was in the proper position, and my patient was grateful in consequence.



High-Frequency Battery

I have observed, in many cases covering a period of three years, that, where the uterus is in the position described in the above case, virtually upside down, it usually will go back to normal position when the adhesions and inflammatory exudates have been removed by means of this high-frequency treatment.

Gonorrheal Infection

Observation 2. Mrs. W., age twenty, of excellent family and personal history. She had a miscarriage at six weeks' pregnancy, with complete expulsion of the uterine contents. Hardly had she recovered from this experience, when a copious yellow discharge began to show, accompanied by almost constant pains in the organs of the pelvic cavity. A microscopical examination of this discharge was made, and it revealed a gonococcus infection. Her husband had previously applied for relief from this yellow discharge, which the microscope also had disclosed to be of gonorrheal nature. The woman was

confined to bed, suffering severe pains and hemorrhages. The usual indicated remedies and various other agencies, including the vaccines, were tried for about two weeks, but with unsatisfactory results.

I now insisted that the lady come to the office for high-frequency treatments, but this proved most difficult, on account of the severe pain felt and consequent inability to walk. However, she was brought to the office daily for a week, and then she was able to come without being assisted. She received the treatments outlined above, and after the third treatment the pain subsided. These séances were continued daily for two weeks, then every other day for two months; and this was sufficient to effect complete relief of all aches and pains. The discharge had ceased entirely, and the woman was able to resume her usual duties, and feeling fine, as she said. A microscopical examination of the discharge made near the end of the treatment proved it to be entirely free from the gonococcus bacillus.

Subinvolved Uterus and Infected Appendages

Observation 3. Mrs. B., age twenty-two, family and personal history good. She had not been well since the birth of her baby, two years before; since that time had always had an enlarged abdomen, pain in the right side over the location of the appendix and ovary, and there was a copious yellow discharge. The latter would cease entirely at times, then, after severe pains and chills, it would again flow profusely. She refused to undergo an operation for the relief of this condition.

Examination revealed a subinvolved uterus, tender ovary and appendix, and a thickened fallopian tube that contained an abscess cavity. She applied for relief by means of the electrical methods, absolutely refusing to submit to an operation. I told her that electrical treatments might make necessary immediate operation, but she was perfectly willing to have this method tried before submitting to the knife.

On account of the perfect drainage through the uterus from the fallopian tube, the direct current was used; this being advisable because of the subinvolution and also in order to promote the evacuation of the abscess cavity in the tube. A negative wet pad was placed on the abdomen, the positive copper amalgamated electrode was inserted into the uterus, and then a current of 5 milliamperes was passed for twenty minutes. This

was repeated on alternate days. The high-frequency current was employed on the intervening days.

After the second week of treatment, the pus discharge gradually became less; however, a severe hemorrhage now took place, which required the most strenuous treatment. The patient was in bed five weeks before the hemorrhagic condition finally subsided. However, the pains in the ovary and appendix still continued. As in the previous cases, she was brought to the office, daily, for high-frequency treatment, as heretofore outlined, and after three months she was discharged, perfectly well.

It is well to mention that in observations No. 2 and No. 3 there was good drainage through the uterus from the fallopian tube, and it was in consequence of this that I felt encouraged to try to save these patients from going on the operating-table. Had the opening from the tube been closed, and, hence, the pus sealed up, it would have been impossible to cure them except by surgical interference; for, an operation would have become imperative after but a few electrical treatments. Such has been my experience, and also that of other observers who are using this modality.

As to the first case cited, that of Mrs. H., it is now three years since the lady was discharged as cured, and she has been and is in perfect health since then, not feeling an ache or pain, whereas before the treatment every move was painful and her menstrual periods were a torment.

In a résumé of the above experiences covering a period of about three years, the following conclusions are arrived at:

Conclusions

An operation for ovarian inflammation and for congestion of the organs of the pelvic cavity can be avoided if the high-frequency bipolar Tesla method, as here outlined, is employed.

This result can be accomplished only if the adhesions are not too extensive or too dense.

Congestion of the ovaries, when complicated by the presence of pus in the fallopian tubes, but where good drainage is present, need not lead to an operation, if treatment with this high-frequency method is adopted.

In any event, this method of treatment should be tried and faithfully carried out before an operation is finally decided upon.

Cystitis and Its Treatment

By GEORGE H. CANDLER, M. D., Chicago, Illinois

Author of "Everyday Diseases of Children"

AMONG the diseases which give the general practitioner undue trouble, cystitis unquestionably ranks high. In the first place, patients do not, as a rule, consult their doctor relative to disorders of the urinary apparatus until the discomfort becomes unbearable, and even then they either object strenuously to thorough examination or (as frequently happens) the doctor himself is unprepared to carry out the procedures necessary for a clean diagnosis. Consequently, erosions of the deep urethra, prostatitis, vesiculitis, simple catarrhal cystitis, other, more serious, vesical infections, and even severe forms of pyelonephrosis are treated "on general principles"; the doctor merely prescribing some urinary antiseptic (most commonly hexamethylenamine), and copious drinking of water; besides, sometimes, certain dietary restrictions. In the more advanced cases, vesical irrigation is carried out; but even here the execution very often is so imperfect that the last state of the patient is worse than was the first.

So, the subject of some easily controlled disorder of the bladder goes along, growing worse from week to week, until at last he seeks the advice of a specialist or, less fortunate, falls into the hands of some advertising quack. Whichever it be, such a patient parts with a large sum of perfectly good money that, in part at least, properly should and actually might have gone into the pocket of the family doctor, as deserved compensation for really effective aid rendered.

In these days of parcels post and accessible, thoroughly equipped laboratories, it is quite unnecessary for the busy physician to be a skilful uranalysist. He should, it is true, be prepared to make the more ordinary tests, and ought to do so; however, very few can afford to devote the time for a full routine chemical and microscopical examination of urine, while some even can not spare the money for the apparatus. Still, every practitioner must train himself to go over the patient with extreme care, and not only must know just what to look for, but must also be able to recognize any conditions that may present themselves unexpectedly.

For example, it will be quite useless to give urinary antiseptics to a patient having a vesical polypus, nor will massive doses of urotropin control even a simple infection of

the bladder if the urine remains distinctly alkaline. To attempt treatment of a supposed cystitis while failing to establish the existence of prostatic hypertrophy, means to invite defeat; and, moreover, one takes money that has not been earned.

Altogether too frequently one hears expressions running somewhat like this:

"O yes, Doctor So-and-So is mighty good when it comes to bringing the babies, but, somehow, he doesn't seem to be able to hit one's chronic trouble. I treated with him for 'most a year for my bladder, and was worse off then than when I started in. So, I thought I'd go to the city, and there I saw a chap at the hospital, and he stuck in a lit-up hollow tube with a looking-glass on it and looked right into my whole waterworks. Took him about an hour to find just where the leak was, but he struck it all right, and fixed me up in less'en a month. But I had to pay him \$200 for the job—half cash down before he'd even look at me. But, then, I s'pose it's worth that to me, anyhow."

Just such cases occur many, many times a day throughout the land, and by reason thereof a few "chaps in the cities" wax rich, while the income of the "home physician" grows "small by degrees and beautifully less." The main object of this article is, to correct this state of affairs as far as possible, by pointing out succinctly just how the doctor may help—and thus hold—his cystitis-patients.

First and foremost, it must be remembered that without initial *congestion* the active cause, bacterial *infection*, could not exist. Such vesical congestion may be quite superficial or it may be deep-seated, and produced by any one of a score of causes.

For instance, pressure or a blow over the bladder may set up inflammation; the prolonged use of alcohol or the ingestion of certain medicinal agents will produce congestion of the mucosa. A true toxic cystitis from the action of such drugs as mercury, silver nitrate, oil of turpentine, balsam of copaiba, phenol can usually readily be recognized. In obscure cases, however, it is always well to ascertain definitely whether any of these or similar agents have been used.

Not a few troublesome attacks of cystitis are set up by the voluntary retention of urine. Overmodest women (and even young men),

through inability to retire unobserved, sometimes allow their bladders to become unduly distended, with the result that, when the viscus finally is emptied, the blood-vessels, suddenly relieved from pressure, become congested; and then the always present bacteria find a soil favorable for their propagation.

Retention due to obstruction, whether of the urethra or by an enlarged prostate gland, is a still more frequent cause. Here, a more or less severe infection usually occurs quickly.

It must be borne in mind, however, that the mere fact that there is pain in the bladder region and pus present in the urine does not necessarily point to the existence of cystitis. The pain of proctitis, prostatitis, even of mere congestion or erosion of the deep urethra, may be referred by the patient to the bladder, while the pus may be of urethral or of renal origin.

Partial retention of urine, with its necessary decomposition, is a very frequent cause of cystitis, as is the presence of calculi. Vesical tumors and tuberculous lesions may easily set up cystitis, and such will yield only to surgical procedure. Somewhat more amenable forms follow pressure or pulling upon the bladder-walls by intrapelvic or abdominal growths. Getting wet or exposure to extreme cold, especially of the pelvis or lower extremities, often causes congestion, as, too, will the passage of highly irritant urine such as occurs in oxaluria, uricacidemia, and so on. Now and again the initial congestion can be traced to sexual excesses.

First—Find the Cause

It is quite apparent that in every case it is desirable to recognize the predisposing cause; while in most instances one must correct or remove it or, where that is impossible, modify as much as possible the resultant condition. For example, it would be quite useless to irrigate the bladder and administer urinary antiseptics when the cystitis is due to a collection of pus behind or in front of the viscus or to the presence of adhesions or other anatomical faults.

Further, it is essential that the invading bacteria be identified and if possible (as it usually is) the direction of the infection ascertained. The principal offending micro-organisms are: the colon-bacillus, the staphylococcus, streptococcus, gonococcus, pneumococcus, tubercle-bacillus, and the urobacillus liquefaciens septicus. In the great majority of chronic cystites, a mixed infection (colon-bacillus, streptococcus, and staphylococcus)

exists. Rarely (and then usually in women or children) the bacillus coli alone can be discovered.

The Facts About Colicystitis

This latter form of the disease (colicystitis) has, until quite recently, received little or no attention, the majority of textbooks failing even to mention it. Nevertheless, the doctor whose work lies chiefly among children must have encountered more than one case and, while labeling it cystitis, wondered just why the disorder assumed such peculiar aspects and what caused the intermittent fever, which persisted despite ordinary treatment. English practitioners speak of cystopyelitis and consider that, while the bladder is primarily infected, the renal pelvis becomes involved later on in some cases, the kidney structures generally, when all the symptoms of pyelonephritis present. As a matter of fact, the "primary invasion of the bladder" is fairly common; but, so far as my own observation extends, an ascending infection is of rare occurrence.

A pure colicystitis is due to the invasion of the vesical mucosa by the bacillus coli communis. It is liable to appear after an attack of enteritis, and Trumpp has suggested that the bacteria migrate through the short female urethra; however, as we know that males also become similarly affected, it is more probable that entrance is gained through breaks in the mucosa of the intestine.

Mild and Severe Types of This Form of Cystitis

The disorder presents itself in two distinct forms, one mild, the other severe. In the first, or mild, variety, the systemic disturbances are but slight, the vesical spasms are fleeting, and the train of symptoms disappears in two or three weeks under the free use of antiseptics. The urine, which when voided shows an acid reaction, is flocculent, contains albumin and bladder-epithelium, and upon standing turns dark, appearing almost like beef-juice. At this later stage, bacteria abound in the urine, while vesical tenesmus is severe at urinating; also, considerable tenderness of the bladder to pressure is exhibited. Under rational treatment, the urine begins to clear up in a few days, the temperature gradually drops, and recovery ensues.

In the *severe type* (which may follow the former) persist for months, all the symptoms enumerated appear aggravated and the health of the patient gradually declines; it is even quite possible the kidney to become involved, when it constitutes the *cystopyelitis* of English

writers. The urine in such cases emits a very fetid odor, contains pus and a large amount of albumin, and on standing becomes almost opaque. Anorexia at this time is pronounced, any food taken being vomited almost immediately. Diarrhea is also likely to add to the discomfort of the patient. It is not improbable that the disorder may run a latent course, possibly being revealed only by chance, as through examination of some cachectic patient recovering from enteric disorders.

Pathology and Treatment of Cystitis

In the early stage, treatment is promptly effective and usually even the most pronounced symptoms can be controlled and dissipated in two or three weeks. A bacillus coli-bacterin should be administered as soon as the diagnosis is made or even if the infection is only suspected. Begin with a good flushing out of the colon. Then carefully cleanse the external genitalia, after which irrigate the bladder with 4 to 6 ounces of a warm solution of lysol (1-4 percent). Tricresol and antiosin (1 : 1000) also are quite as effective—the latter I prefer in the early stage. Repeat this procedure daily, seeing to it that the solution is retained in the bladder for a few minutes.

Arbutin and hexamethylenamine should be given in alternation, a dose every three hours, 1 grain of the first and 2 1-2 to 5 grains of the latter. The hexamethylenamine and acid sodium phosphate compound tablet most satisfactorily meets the requirements. A daily saline laxative is beneficial. About an hour after each meal 5 grains of the compound sulphocarbols, with plenty of water, should be administered to secure intestinal cleanliness; moreover, the sulphocarbols eliminated through the kidneys exerts a beneficial action. In the worst cases, 1 grain of methylene-blue may be exhibited four times daily, for two days, and then salol, 1 grain, alternated with the hexamethylenamine compound. Hydrastine hydrochloride, 1-32 grain, and arbutin, 1-3 grain, should be given three times a day, and continued for some time after normal conditions are restored.

In considering an ordinary attack of cystitis, it is necessary to ascertain whether the infection occurred either (1) by the descending route—from the kidney, (2) by the hematogenous route—through the circulation, (3) by the ascending route—through the urethra, or (4) by direct entrance from adjacent organs. When a suppurative process exists in the kidney itself, the secondary

cystitis is comparatively of little importance, but pus-producing germs may pass through a healthy kidney without affecting it in any way, and yet set up an infection of the bladder. Here, unless the remote source of the microorganisms can be ascertained, treatment, to be effective, must be directed almost entirely toward the bladder.

In gonorrheal cystitis in the male, we know that the Neisser bacillus has ascended from the urethra; in females, there is a chance of the infection occurring by direct entrance from adjacent pelvic organs. In not a few cases, I have found an intractable cystitis to disappear coincidentally when an existing proctitis under treatment was cured.

These facts are presented, not because they are at all new, but in order to impress the basal truth that there can be no routine treatment for cystitis; rather, the affection calls for the most careful diagnostic work and a nicely balanced and diversified therapy.

It is out of the question here to consider fully the pathology of cystitis. Suffice to say that in the *acute* form the inflammatory process usually begins in the neighborhood of the trigone, but very shortly the entire mucous membrane becomes involved; and erosions and small ulcers develop, chiefly in the vicinity of the vessels about the vesical neck.

Those familiar with the appearance of the normal bladder are prone to be completely discouraged when they first observe through a cystoscope the changes brought about by a cystitis of long standing. The mucosa, instead of being pink, is of a gray or even yellowish color. The vessels stand out like cords and trabeculae and diverticulæ (some containing calculi or mucus) are abundant. The wall itself, as a rule, is greatly thickened, consequently, the capacity of the bladder materially reduced. In some paralytic and in all obstructive cases of cystitis, the viscus is dilated. As in acute cystitis, erosions and ulcers are usually present. Not infrequently more or less extensive sheets of a pseudo-membranous formation are seen adherent to the bladder-wall.

In so-called *interstitial cystitis*, the inflammatory changes extend deeply and the bladder is markedly shrunken. In this form, abscesses not infrequently form and rupture into the viscus, causing a sudden marked pyuria or even setting up a severe pericystitis.

In gonorrheal cystitis, as a rule, the lower quadrant of the bladder is alone involved.

[To be continued.]

Quinsy, or Peritonsillar Abscess

By E. HARRISON GRIFFIN, M. D., New York City

WHAT is the trouble? How long have you had it? These were two stereotyped questions I asked every patient with a sore throat that applied at the old Outdoor Throat Department of Bellevue Hospital. If he mumbled some words in answer to my question and in so doing showed an inability to open his mouth, or tried to save himself pain in doing so, I knew at once that I had to deal with a case of quinsy, or, peritonsillar abscess. For, this inability to open one's mouth is a certain sign of quinsy. In diphtheria, follicular tonsillitis, croupous tonsillitis, tuberculous conditions, and syphilitic ulcerations of the buccal cavity, this particular symptom is absent.

The temperature in quinsy ranges from 100° to even 104° F. The pain at the angle of the jaw, shooting up the side of the face into the ear and restricting the movement of the jaw, is the external symptom.

In examining the throat, he is a wise practitioner who looks at quinsy simply as an abscess of this region, and one that should come to a point inside of a few days. This is true of every quinsy of a pure rheumatic type; and over eighty percent are of this kind. If pus fails to show at this limit of time, we are dealing with a quinsy of a gouty type. I have opened quinsy swellings so thoroughly that I could pass the probe through from one opening to another and yet fail to find pus. The parts were hard to the touch, and the edges of the cuts were distinct and indurated. This is the picture of a gouty quinsy.

In rheumatic quinsy the finger can generally map out some soft place in the course of twenty-four or forty-eight hours after the initial chill. The progress of the disease is quicker, and the denouement, the opening either by the knife or nature, much shorter.

It is very essential to make the differential diagnosis between a rheumatic and a gouty quinsy, as in one the excessive pain of this affection is short, while under improper treatment the gouty is prolonged for days or even weeks. A gouty quinsy very seldom suppurates; if it does, it is only after a prolonged period.

The treatment: The bowels should be kept well open during the attack. Also, a nightly dose of 10 grains of quinine should be given, in pill form, if the patient is able to swallow, or in solution, if he can not take a pill. Also

10 grains of salicylate of sodium may be given every three hours, in plenty of water. Scarcifying the surface of the inflammation with a small bistoury, by causing the escape of blood, often gives relief before the pus has formed. The throat should be examined, at each visit, with the aid of a strong light. The fingers should be used at each examination, to detect the early formation of pus. Time should be taken in this examination, and pus should be liberated as early as possible, for the comfort of the patient.

The parts can be soothed by the application of a 10- to 20-percent solution of cocaine, to be rubbed over the surface of the membrane with a wad of cotton fastened to a probe. The operation is painless and the relief afforded is beyond description. The worst case of quinsy I think I ever treated was the following:

A woman applied at the Bellevue Dispensary for treatment. She had seen a physician previous to this visit, who had diagnosed her condition as hypertrophy of the tonsils. He had removed part of the tonsil. When she applied for treatment, it was only with greatest difficulty that she could breathe. Her mouth was tightly clinched and I was only able just to introduce a knife between her set teeth, and had to grope in the dark for the locating of pus, but finally was able to strike it. The pus flowed out in abundance, and the patient left the clinic, able to open her mouth wide. She was able to eat a meal for the first time in a week. An operation on the tonsil under these conditions was positively not indicated and might have led to serious results. There had evidently been a mistaken diagnosis.

Quinsy is no discriminator as to age. I have seen it in a baby of two months and in an old man of eighty, both with initial attacks. I have seen one attack of quinsy follow another, year in and year out, until the throat-membrane had had a thorough treatment and the patient's system had undergone thorough medication. Then these yearly attacks have stopped and the patient has been free from his yearly quinsy.

It is always wise to start in with a 5-grain dose of calomel, followed six hours afterward by a large saline purgative. A 10-grain dose of quinine may be given, with benefit, with the calomel. If this does not abort the quinsy, we have to deal with the stage of

suppuration. This is hastened by directing the patient to steam his throat continuously with the aid of the kettles that are common on the market.

Some years ago, I was called to see a patient in consultation at the Hospital for Deformities and Joint Diseases. The patient was a well-developed woman who gave a history of quinsy. She had been ill for over a week. The quinsy had been opened thoroughly and properly; still, she was unable to take food or leave her bed. She had had a temperature of about 103 degrees. With difficulty I passed my finger into her mouth, trying to feel if there was any point where pus might be present. The whole part was one large, hard mass; there was absolutely no spot where pus might be hidden.

I prescribed a purgative, to be followed by a saline in the morning; also 20 drops of wine of colchicum to be taken every three hours, in water. Upon my visit the next day, I found the patient sitting up in bed. The fever had disappeared and she was able to open her mouth to the normal extent. The following day she called at my office to receive treatment. My first visit was on a Friday, my second on a Saturday, when she was out of bed and well, and Sunday the patient was at my office. The result in this type of quinsy I attributed to the diagnosis of gouty peritonsillitis.

These two cases are only two of hundreds in which I have used this drug—that is, colchicum—with most gratifying results.

In treating quinsy, one should not be satisfied with a single method. One should go into the history of the case, find out how many attacks the patient has had, and be sure to make a differential diagnosis between rheumatic and gouty peritonsillitis. One should find the site of the pus and open the abscess as soon as possible, and keep the part open until the wound granulates from the bottom. The cavity should be washed out, with a small syringe, with a 25-percent solution of argyrol (which is better than iodine); and this should be continued till the wound has granulated. If this is done, the patient will be less liable to a return of the quinsy.

After an attack, the patient should be placed under proper medication, to prevent the yearly return of the affection. His urine should be examined in every case. Albumin is generally present during an attack, but disappears after convalescence. Do not be satisfied with the statement that the patient has had his yearly quinsy for ten or twenty years and that his father before him had his quinsy. Look for the cause and correct it.

Block, of Brooklyn, finds a hereditary factor in separation, desertion, and divorce, and states that these run through families. I believe this is so; but the cause of quinsy can be found, and the hereditary proclivities eliminated if the disease is individually studied, and if the patient follows systematically a prescribed treatment for this very painful and, in some cases, dangerous ailment.

I AM more powerful than the combined armies of the world.

I have destroyed more men than all the wars of the world.

I am more deadly than bullets, and I have wrecked more homes than the mightiest of siege guns.

I steal, in the United States alone, over \$300,000,000 each year.

I spare no one, and I find my victims among the rich and poor alike; the young and the old, the strong and the weak, widows and orphans know me.

I loom up to such proportions

that I cast my shadow over every field of labor from the turning of the grindstone to the moving of every train.

I am relentless. I am everywhere—in the home, on the street, in the factory, at railroad crossings, and on the sea.

I bring sickness, degradation and death, and yet few seek to avoid me.

I destroy, crush or maim; I give nothing, but take all.

I am your worst enemy.

I AM CARELESSNESS.

—George W. Burr.

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

EDITORIAL NOTE.—This is the tenth instalment of Doctor Gray's remarkable autobiography, in which he gives an intimate record of his adventurous and romantic medical career, beginning in our own South before the War and now continuing, as it has for years, in the most tropical and pestilential portion of Mexico.

[Continued from page 1121, December issue.]

Magic Podophyllin

I HAD a peculiar case in a ranchman, with double pneumonia, few years since, whom I visited on a Sunday morning. The case seemed utterly hopeless; and I refer to it because it developed a revelation that might not have been known to this day, if ever.

When I was a boy, podophyllum decoction was the slave purge on the plantation of my people; and it got into European medicine as a vegetable calomel—which it really is in a high and an innocent degree. I had the esinoid prepared in a compound, as follows:

Podophyllin res.	gr. 1-2
Hyoscyamus nig.	gr. 1-8
Extract nux vomica.	gr. 1-16
M. Ft. one pill or tablet.	

Two of these pills were a full adult dose, under current textbook authority, and this I have never ventured to exceed. I left 20 of them with the ranchman, to take 2 every night. Also I gave him some aconitine granules, with special instructions, as another visit was impossible before the next Sunday; being satisfied that he would not live twenty-four hours. The next Saturday afternoon, I went to the office of vital statistics, to look for the record of his death; which, though, did not appear. Hence, I went to his ranch early Sunday morning, and was astounded to find him weeding his garden.

As soon as I was out of the house, at my first visit, he told his wife that I knew he was doomed to die; and that, if those little black pills, 2 every night, would help him in any degree, all swallowed at once would do much more good or quickly put him out of his misery. The wife protested. But he had the little fellows in his hand, thrust them into his mouth, and down they went. In less than an hour, he was vomiting violently, and then purging a few hours later as if he had a gallon of castor-oil in him; the two operations continuing till the next day, when he was completely empty. But his cough and fever were gone. He took the aconitine the next day and subsequently, having a sufficiency of excessive dosage.

The incident started me to experimenting, gradually raising the authorized dosage till I found safe effectiveness in adult dosage for strong men from 8 pills or tablets; strong women, 6; less proportionately for feeblers adults and others under 16 years. Now thousands of persons annually use the substance under that scale of dosage, in this district, and I have published it, in medical journals and otherwise, far and wide. I have known of two persons having taken 18 tablets by mistake, this quantity having been supplied, each of them to take 8 one night, and 2 each for the five subsequent nights. The 8 were taken, and soon after some other party gave the 10. Both cases were chronic rebellious malaria; and the effect practically was the same as with the man who took 20 of the pills; there was no more malaria.

Clean Out and Keep Clean

I give the substance thus for an active purge; and, when the case is not too urgent, one tablet every half hour is my favorite method, till the dose is complete. At night, is the proper time to take such purge, or even calomel, so the patient will not be eating afterward, which is detrimental. I use the compound pills, 1 or 2 tablets at night, as a hepatic adjuvant; they also tend to assist the stomach and the small intestines in labored digestion. I give even 1-20 of a grain at night for months in the treatment of anemia.

I have now dispensed, for many years

Calomel.	gr. 1-6
Podophyllin.	gr. 1-6
Bilein.	gr. 1-8
Strychnine arsenate.	gr. 1-250

in tablet form, for certain complications, in which I get good service.

I have found that nearly every physical distress I am called to combat originates from derangements of the liver and the stomach, although it be of virulent germ characteristics, which cannot develop in a normal system. I must have had disease-germs in my system a thousand times, sufficiently numerous to have infected many people with systems vitiated in a degree to be favorable

culture-fields; yet, I was never sick, because never below normality, to enable the invaders to propagate. I have seen other persons thus exempt, even natives down here, who had no subnormal defect to nourish infection. Natural man is immune from disease-invasion. Man becomes unnatural by vitiating the liver and stomach till he sinks to subnormal impotence, unable to resist invasion; and that deplorable state supervenes from imprudent eating and drinking, and permitting indigestion to superinduce costiveness, when hereditary taint is not the defective bequest. There are so many causes here that I long since abandoned the pursuit of antecedents, and strive to cope with what exists.

I begin my assault on the invaders in their strongholds of the liver and stomach, the alimentary canal being dominated by the stomach, and very naturally participates in whatever medication that may be introduced. And I have found that nothing short of heroic purges, such as I have indicated, or calomel, followed by castor-oil (unsafe in this climate), and glycerin enemas or suppositories (the latter, however, being too expensive for plantation work), are the primal stepping-stones to successful medication. The saline purgatives are serviceable the mornings subsequent to night-purges, in certain cases, not needed in many. Such salts and castor-oil, either in single dosage, though, fail to cope successfully with stubborn biliousness of malarial fever; and the loudly bruted pills from the United States and elsewhere, claimed to be specifics in the work I have to do, were practically worthless in my hands; in fact, I have found no patent medicine worth the empty flasks that contained it, in any applications I have met, where claimed to be all-powerful.

The obstructions of the liver and stomach once cleared away, other medication exercises a magical influence, which would have been practically *nil* with inadequate elimination and washing-out of the toxins. The debris of fetid excrement sticking to the surface of the walls of the colon and rectum often superinduce a return of abated fever, which necessitates frequent washing out. I usually employ normal salt solutions among the plantation people; probably as good as the high-toned preparations that I use among the rich. But you all have more free negroes on plantations and in the small towns of the southern states than there are peons in all of Mexico; and your colored contingents are vicious, filthy, and shiftless in a degree, as low as the bottom strata of humanity here.

Hence you really need quickly acting heroics in the treatment of them.

Aconitine Experience

I had a typical aconitine experience here at home last year. I gave the mother 24 teaspoonfuls of a solution, telling her to give her little girl one every fifteen minutes, and that by the time she had taken four or five I should return. I was in the house just before time to give the fifth dose and found the child vomiting as if she were doubly seasick. She calmed directly, when the mother asked if she must continue the dosage; that, if so, it was nearly used up.

That surprised me, as there should have been 20 doses. I asked her what she had done with the medicine. She said she had given the child four spoonfuls four times—16 doses in three-quarters of an hour. I stopped the dosage and gave no more medicine that day, as there were no symptoms of aconite-poisoning. The fever was gone when the emesis ceased, and did not return. Prompt and active vomiting certainly saved her life, as the dose would have been lethal had it remained; and the doses had been ingested at such short intervals that it was tantamount to having taken all at one time. But I have shied clear of experimenting on that line.

Obstetrical Notes

I have an important practice with young mothers whose lactation is defective; and have not failed in a single case to secure them a liberal supply with pilocarpine—maybe not known to some young practitioners.

I have never had any regular obstetric practice, though amply instructed to have been at least practical, that work here being the right of midwives; and a very light task, as a rule, the dance frequently being over when the mystic woman arrives, although she was called at the first symptom of labor-pains. And I have seen the mother of a babe born at midnight in the kitchen, at sunrise the next morning getting breakfast ready. But they get stuck, sometimes, and have to yell to me. I have the very best of all the ergot derivatives that have appeared, which usually gets them out of the woods, where there is a suspension indicating such application. But when there is a serious unnatural complication, requiring to be manipulated by painful and even perilous force, the poor midwives are all at sea, in deep muddy water. I give the poor sufferer an anesthetic, and show and help the distressed midwives out of their

difficulties. It is only in such cases, when the ergotin fails to act, that I am ever present.

While entangled in the intricacies of clinical female practice it may be as well to state that apiol gets me out of most menstrual troubles that come my way. But all such cases, as well as the difficulties with labor-pains and false positions of the child, come from the better classes, not the peon, or Indian, element. I now recall but two such cases calling for help from me in twenty years; and the peon births are about seven to one of the better classes.

I never treat any female diseases apart from gonorrhea and its complications; and most of that is in married women of the better classes, infected by their husbands. It rarely comes to me from peons or Indians.

Hereditary syphilis is immunized in the embryo and fetus by injecting salvarsan, at intervals of eight days between applications, into the prospective mother, 5 to 6 times, fractioned 0.20 to 0.30, up to 0.40 Gram. Then, after a rest of two months, another like series, 0.15 and 0.10 Gram. Renal func-

tions rendering this feasible, the urine should be under rigorous surveillance in all stages of the treatment. And when there is marked intolerance, benzoate or biniodide of mercury should be associated with salversan in aqueous solution. *This is often intensely important in curative adult treatment.*

Abortions have not been in excess of those of healthy women undergoing no treatment, and far less than those of syphilitic women under no treatment. There were 75 percent still-births and prompt deaths after birth from syphilitic mothers, twenty months since, according to French obstetric statistics by Sauvage; the same class of mothers now giving 92 percent live and fairly normal births, after the treatment, which should have inception early after pregnancy is declared.

Salvarsan is a high-grade perilous substance, and the fractional dosage should not minimize the caution, the delicate condition of the pregnant woman requiring all the care that full adult dosage demands in regular practice.

(To be continued.)

GRIN*

By ROBERT W. SERVICE

*If you're up against a bruiser and you're getting knocked about—
Grin.*

*If you're feeling pretty groggy, and you're licked beyond a doubt—
Grin.*

*Don't let him see you're funkng, let him know with every clout,
Though your face is battered to a pulp, your blooming heart is stout;
Just stand upon your pins until the beggar knocks you out—
And grin.*

*This life's a bally battle, and the same advice holds true
Of grin.*

*If you're up against it badly, then it's only one on you,
So grin.*

*If the future's black as thunder, don't let people see you're blue,
Just cultivate a cast-iron smile of joy the whole day through;
If they call you "Little Sunshine," wish that they'd no troubles too—
You may—grin.*

*Rise up in the morning with the will that, smooth or rough,
You'll grin.*

*Sink to sleep at midnight, and although you're feeling tough,
Yet grin.*

*There's nothing gained by whining, and you're not that kind of stuff;
You're a fighter from away back, and you WON'T take a rebuff;
Your trouble is that you don't know when you have had enough—
Don't give in.*

*If Fate should down you, just get up and take another cuff;
You may bank on it that there is no philosophy like bluff,
And grin.*

*From "The Spell of the Yukon"

What Others are Doing

TOBACCO AND THE HEART

In the article which follows, we have given an abstract of some clinical experiments made by Dr. J. Aikman, to determine the effect of cigarette smoking upon pulse repidity and blood pressure. In *The New York Medical Journal* for September 11, 1915 (p. 541), we find another paper upon this same subject, contributed by Robert N. Willson, who cites the histories of two interesting cases of tobacco-poisoning. The first of these was that of a young man a little over 30 years of age who had anemia and suffered from a number of attacks of palpitation, associated with cyanosis, when the pulse rate ran up to 120; there also was a systolic murmur at the base of the heart. Under simple hygienic treatment, with withdrawal of his tobacco, these symptoms disappeared in every instance.

The second patient was a member of Doctor Willson's own family—a man of 76 years. In his case, there was excessively low blood pressure and, what was most significant, an attack of hemianopsia, with an array of paralytic symptoms present more or less for a period of seven years, but, as a rule, clearing up rapidly when the patient stopped the use of tobacco.

Doctor Willson utilizes these cases as a text to demonstrate the disastrous effects which may follow the use of this herb. While personally he knows of no one who actually has been killed by smoking, it is his confident belief that the responsibility for the arteriosclerosis not attributable either to syphilis or old age must be divided between the use of tobacco and the various forms of food-toxemia.

He quotes various authorities to prove that smoking tends to increase the frequency of the heart beat and to change arterial pressure. Thus, to illustrate, he tells how, in 62 separate experiments in this direction, made at frequent intervals, in only 2 of the subjects did the inhalation of tobacco-smoke fail to produce marked blood-pressure changes. Doctor Willson is convinced that most of the cases of angina pectoris are due to the habitual use

of tobacco, and that many, if not all, of the instances of pseudoangina are examples of toxic involvement of the ganglia of the heart or of the nerves of the cardiac plexus.

He also says that he is accumulating considerable evidence which seems to prove that the children of a tobacco-user and his tobacco-absorbing wife also pay a cardiovascular toll, in a tendency to acquiring fibrous and leathery blood-vessels.

THE EFFECT OF TOBACCO-SMOKE UPON THE HEART

If tobacco is an evil, then it is a gigantic evil. Look at these figures: According to John Aikman (*N. Y. Med. Jour.*, Oct. 30, 1915, p. 891), the world's tobacco production of 1912 was 2,835,000,000 pounds. More than 578,000,000 pounds of the weed were consumed in our own country, and the value of the product raised in the United States was in excess of \$416,000,000. This showing places the tobacco-industry ahead of the automobile industry, the baking industry, and numerous other of our foremost enterprises.

Is the smoking of tobacco seriously injurious? Doctor Aikman, after having conducted a rather extensive investigation of the literature and making some personal experiments, positively declares that it is. Thus, for instance, he tried to learn the effect of cigarette-smoke upon 27 young men, ranging in age from 16 to 31 years. In these experiments, the subject sat quietly in a chair in a quiet room, with the examiner, and smoked the cigarette as he was accustomed to do. Tests of the pulse and the blood pressure were made both before and after smoking, great care being taken to exclude all psychical or other influences tending to interfere with the accuracy of results.

The effect upon the pulse, produced by smoking a single cigarette, was marked. Out of the 27 men tested, 16 showed an increase of over 8 beats per minute. Except in 4 of them, the rate was increased, and 2 of these 4 had an abnormally rapid pulse at the beginning. In some cases, the increase in rapidity was spectacular, the greatest

being 24 beats in two and one-half minutes; the average increase being 14 per minute.

The effects upon the blood pressure were not so marked and uniform. Thus, in 25 of the subjects, the systolic pressure fell in 12 of them, in 5 there was an increase, while 18 showed no change. The average gain was 5.8 mm., and the average fall was 6.16 mm.

Doctor Aikman also observed that those who inhaled tobacco-smoke displayed a much more decided response to the tobacco than those who did not. It was also found that cigarette smoking tends to cause irregular action of the pulse.

Doctor Aikman comes to the conclusion, as the result of his own experiments, as well as from the widely conflicting opinions of various other experimenters, that we are far from possessing definite information concerning the true effects of tobacco smoking upon man. However, he personally feels that this narcotic must have played some part in the great increase of circulatory disease witnessed within the last few years, during which period the tobacco consumption has increased so enormously. "Is it not possible," he adds, "that the disturbances of circulation which we have seen produced by a very small amount of tobacco, frequently repeated daily for years, may play a much greater part in the general increase of circulatory diseases than we realize?"

NOVEL TREATMENT FOR ACUTE RESPIRATORY DISEASES

In dealing with acute infectious disturbances of the upper air-passages, says Irving W. Voorhees (*Boston Med. & Surg. Jour.*, Nov. 4, 1914, p. 702), the two remedies most commonly used by specialists are silver, in some form, and iodoform. The former is irritating when strong enough to be effective; the latter, whether dissolved in ether or in oil, is both irritating and esthetically unpleasant.

For some years past, Doctor Voorhees has been securing rather remarkable results in this class of diseases from direct application of such aromatic substances as thymol, eucalyptol, menthol, and the oils of cloves and cinnamon. His favorite now seems to be a solution of menthol in oil, in the strength of from 5 to 25 percent. The applications are made every eight to twelve hours—usually twice a day. If the patient complains of the burning caused, then a few

drops of a 10-percent cocaine solution should be instilled a few minutes before applying the menthol.

In bronchitis, Doctor Voorhees says, it is astonishing how effective the treatment is. It relieves cough, increases expectoration, is antiseptic, while the oil used as a vehicle makes it sedative. Treated in this way, he declares that a case of simple bronchitis (not due to pneumococcus or streptococcus) should not last more than seventy-two hours. Applications are made directly to the trachea with a laryngeal syringe, while the patient exhales and inhales through the open mouth. In acute laryngitis, the drops should fall directly on the rima glottidis during phonation.

In acute rhinitis, the patient is asked to lie down with the head far extended over the edge of a couch, and the drops (usually 5 percent in strength) are instilled into the nose with a dropper, care being taken to point the dropper upward in the direction of the eyes. In pharyngitis, a postnasal applicator is used to apply the menthol-oil solution.

MENTHOL-OIL SOLUTION IN EARACHE

An effective remedy for earache, according to Voorhees, in the article cited just above, is the menthol-oil solution recommended for treating infection of the upper air-passages. In furunculosis of the ear-canal, he packs with gauze soaked in a 10-percent oily solution of menthol.

PHENOLPHTHALEIN AS A LAXATIVE

"I have prescribed rather more than 1000 doses of phenolphthalein," writes J. C. McWalter in *The Lancet* for November 20, 1915 (p. 1141), "and find it probably the most useful laxative in the Pharmacopeia." This certainly is praise unqualified. Doctor McWalter declares that a sufficient dose of phenolphthalein produces loose movements within four to six hours, and this result is obtained without griping or pain. Furthermore, it does not seem to lose its effect by continued use, at least not until it has been persisted in for a considerable time. Its action, he says, is very much like that of cascara sagrada, but it has the advantage of being more active and less griping.

McWalter says that he has prescribed phenolphthalein in many cases of pregnancy, and it seems to him almost an ideal laxative in that condition. This remedy is particularly useful in intestinal toxemia, offering

almost ideal advantages as a medicament in these cases, since it is mildly antiseptic without being toxic or cumulative, while free from irritating action upon the mucous membrane of the intestine.

In cases of mucomembranous colitis, he asserts, phenolphthalein, given in doses of 1-2 grain thrice daily, will be found eminently satisfactory in preventing enterospasm, easing pain, checking excessive secretion of mucus, improving the neurasthenia, and generally improving the patient's condition. He ordinarily administers it in doses of 1-2 to 3-4 grain for children and of 2 to 6 grains for an adult.

SYPHILIS IN THE ARMY AND IN CIVIL LIFE

There have been all kinds of estimates as to the percentage of the population infected with syphilis. Captain Edward B. Vedder, of the United States Army (whose pioneer work in emetine-therapy in amebic dysentery is known to every reader of this journal), has thrown more light upon the prevalence of syphilis than any man who has heretofore studied it in this country. He has made or caused to be made hundreds of Wassermann reactions upon enlisted men in the army, West Point students, and others.

First Wassermann reactions were made upon 1019 newly enlisted white recruits at Fort Slocum, near New York City, and at Columbus Barracks, Columbus, Ohio. Of these men, it was shown, approximately 16.77 percent were presumably syphilitic. Inasmuch as everyone of these young men presented no apparent signs of syphilitic infection whatever and all were accepted by the medical officer as free from venereal disease, this percentage is certainly remarkably high. Captain Vedder shows, however, that the percentage of syphilis in these young soldiers is undoubtedly lower than in the corresponding civil population from which they were recruited. He estimates that about 20 percent of young adults of this class are infected with syphilis.

The results of the Wassermann tests made at West Point Military Academy are interesting and surprising. The cadets are picked young men, coming presumably from a superior class, corresponding to the class from which the students in our colleges are recruited; and, yet, it was shown that probably 5.46 percent of these West-Pointers were syphilitic. Not one of them gave objective signs of the disease.

The negro recruits were shown to be much more generally infected with syphilis than white recruits, the disease being two or three times more prevalent among the colored enlisted men. The Wassermann tests of 1472 colored soldiers belonging to the 9th and 10th cavalry regiments showed that probably 36 per cent were suffering from the disease. The highest degree of syphilitic infection, however, was found in the Puerto Rico regiment, recruited entirely on the island of Puerto Rico. Of these men, 51.79 percent were shown to be probably syphilitic. Captain Vedder expresses the opinion that this very large percentage of venereal disease on the island of Puerto Rico is very largely responsible for the anemia and debilitated conditions so common among the poorer inhabitants of that island. Syphilis, tuberculosis, malaria, and malnutrition are even more potent causes for ill health among these people than is hookworm-disease.

These statistics certainly indicate the seriousness of the problem of venereal disease in our country. While the white race is much freer from these infections than are members of the colored race, and Americans, in this respect, are far superior to the Latin people, of whom the Puerto Ricans may be considered typical, there can be no doubt that a dangerously large percentage of our people are being continuously undermined in health by the ravages of this secret, insidious, and too generally overlooked plague of overcivilization.

COLIC IN INFANTS

In a preceding number of this journal, attention has been called to the value of an emulsion of mineral oil in the treatment of colicky babies. This emulsion has been strongly advocated by Dr. Eric Pritchard, of London. In a recent communication, referred to in *The Universal Medical Record* for September, 1915 (p. 216), Doctor Pritchard says that in treating these colicky infants he sometimes almost fills their intestines with the petroleum-emulsion, either alone or in combination with bismuth carbonate.

The chief objection to the administration of the bismuth in large doses is, that its gritty properties make it distasteful to the infant. This disadvantage, however, can be overcome by using the preparation known as glycerinum bismuthi carbonatis—a most elegant preparation, of milky softness, the details for the making of which are given in the Codex of the British Pharmacopeia. One, or even two,

drams of this preparation, combined with an equal quantity of petroleum-emulsion, serves as a most efficient carminative for infants troubled with colic. Such a mixture may be given independently or else shaken up with the baby's milk, from the nursing-bottle.

THE ENTAMEBA OF PYORRHEA

Dr. C. C. Bass, of New Orleans, certainly evidences no loss of faith in the specific action of the *entamoeba buccalis*—or, as he calls it, the *entamoeba gingivalis*—in the causation of dental pyorrhea. In his address delivered before the Indiana State Medical Association (printed in its journal for October, 1915, p. 455), he declares that this parasite is present in all pyorrheal lesions, but invariably is absent from the mouth when there is no pyorrheal lesion, and that it cannot be demonstrated in the absence of suppurating tissue.

Compared as to size with other so-called microorganisms, Doctor Bass says, the *entameba*, is "an enormous animal, several hundred times larger than the streptococcus, staphylococcus or pneumococcus. This amebic organism has the power of moving around and under the microscope we can see it passing from place to place. In passing between cellular organisms, it often drags behind itself a mass of bacteria, sometimes several different kinds being conveyed in this way, in and out of the living tooth-structure. In this way, the bacteria are carried deeply into inflamed tissue and the formation of pus is the natural result.

As Doctor Bass says, there is more or less symbiosis between the bacteria and the *entameba*. It is probable that the bacteria could not get along without the *entameba*, and vice versa.

This harmful organism is exceedingly common. The number of persons infected with this parasite probably constitutes as high as 95 to 99 percent of the entire population. Infection usually takes place in childhood, probably 50 percent of all persons being attacked between the twelfth and fifteenth years. Infection may be carried in many ways, as, for instance, by the ordinary drinking-cup. Thus, in the home, the parents have the disease and all drink from the same vessel; again, their little boy receives a toy-horn and the mother shows him how to blow it, and then he puts the horn into his mouth, thereby transferring some of the amebas to his own mouth. Kissing is probably a common means.

As an illustration of the possible effect of an uncured pyorrhea upon an individual's health, Doctor Bass has calculated the amount of pus which may be secreted by an ordinary individual who has 32 teeth. He declares that this calculation shows that during twenty or more years of adult life, no less than 8 gallons of pus is secreted by an individual thus affected.

Doctor Bass is still firm in his faith that in emetine we have a specific remedy for the parasite. "Our knowledge of the disease and of the parasite is so imperfect," he declares, "that our methods of treatment are far from perfect and far from satisfactory. It frequently occurs that a few doses of emetine are followed by entire disappearance of the *entameba* and of the lesions. They remain absent for variable lengths of time, but, since the source of reinfection is so very great, as everybody else has the same disease and we are constantly exposed to reinfection, the organism appears again after a time. We must know a great deal more about the use of emetine, a great deal more about the manner in which the parasite is transferred from one individual to another, before we can lay down dogmatic rules for treatment and before we shall be able to be perfectly successful in treatment."

PAROXYSMAL CORYZA, AND ITS CURE WITH EMETINE. ENTAMEBA NASALIS

In a paper published in *The Medical Record*, for October 9, 1915 (p. 604), Alexander C. Howe describes a group of nasal symptoms which, he says, for a long time has baffled all attempts at relief. The clinical picture exhibits the following group of symptoms: sudden onset, sneezing, watery nasal discharge, stuffiness of the nose, postnasal rawness, and a sense of chilliness. The attack may last a few minutes, or as long as an hour, and it disappears as rapidly as it comes on. There are no sequels. The subject of these attacks usually is depressed physically and mentally and rarely feels in proper condition for efficient work. Between attacks, the nasal passages rarely feel comfortable.

The beginning of the attacks, generally is ascribed to exposure to drafts, and the patient thinks he is subject to "colds."

Doctor Howe calls attacks of this kind "paroxysmal, or abortive, coryza." In his study of this condition, he has uncovered the interesting fact that more or less extensive pyorrhea alveolaris is present in the mouth

of practically every patient affected. Not only did he find the distinctive entameba of Riggs's disease in the oral pus-pockets, but he also succeeded in finding, in the majority of the patients, another, but different, ameba in the nose; this resembling the entameba histolytica of dysentery more than the entameba buccalis. He calls this the entameba nasalis.

Doctor Howe describes a large number of cases of paroxysmal coryza, 15 of them in detail. These fall into several classes, according to the associated complications. It is interesting to learn, however, that in the majority of instances he was able to effect a cure of the disease with the aid of emetine. For instance, in his first class of uncomplicated cases, consisting of 23 patients, all but 3 were entirely relieved of the general nasal symptoms by emetine treatment. In the 3 cases unrelieved, the patients suffered little if any, from disease of the mouth. Even in cases complicated with sinus disease, or with some serious general condition, relief usually followed the emetine treatment.

ALUMINUM-ACETATE APPLICATIONS FOR SMALLPOX

Some remarkable results in the local treatment of smallpox are recorded by Ferdinand Traeger, of the municipal hospital of Kaaden, Austria, which certainly deserve attention at the hand of those who still may happen to encounter cases of developed variola. The remedy referred to is a solution of aluminum acetate in alcohol (spiritus vini rectificatus, of the German Pharmacopeia, of 60 percent by weight), a preparation of late years grown in favor among physicians of Germany and Austria-Hungary—especially during the present war—and already alluded to in this department, as an antiseptic and antiphlogistic dressing for wounds, particularly purulent ones. It was his familiarity with its excellent action on infected wounds that prompted Doctor Traeger—as a sort of happy inspiration—to give this aluminum-acetate lotion a trial when a smallpox-victim (the fourth or fifth in an incipient epidemic started by a soldier) in the suppurative stage and very ill came under his care.

For years, Doctor Traeger writes (*Ther. d. Gegenw.*, May, 1915, p. 200), he had been employing this popular agent and had attained many a fine result, and it suddenly occurred to him that, if embrocations with it are capable of healing abscesses and causing to disappear inflamed lymph-glands of hazel-

nut size under the thick cutis, it ought to act still more effectually upon the variola-efflorescence covered merely by a very thin epidermis. So, he ordered the solution of 5-percent strength. Pads, or compresses, of soft cambric ("Billroth battiste") were made wet with the liquid and placed over the erupted areas and allowed to remain three hours; beginning with the face, first of all, then in rotation, these wet compresses were applied successively to the chest, the abdomen, and the dorsum.

[More than likely the author means *solution* of aluminum acetate of the German Pharmacopeia—modern medical writers are so very careless in their use of language. This solution also is known as Burow's liquor (pronounced Booroff), after its sponsor, Karl August von Burow, German surgeon, who died in 1874. Formulas will be found in the National Formulary, U. S. Dispensatory, and Standard Formulary.—ED.]

Already the following day a marked improvement in the patient's condition was discernable and her temperature had abated considerably. On the second day, the pustules had lost their glistening appearance; on the third, they had visibly shriveled; and on the fourth many of the eruptions had disappeared; in the further course of a few days, nothing remained of any of the fully developed pustules but livid spots on the skin, not even crusts having formed.

Meanwhile the malady had broken out in the local orphan-asylum, 13 boys and 1 girl coming down within two days; all but 3 of the attacks being severe in nature, a few even of the confluent type. Here, too, the outcome of the aluminum-acetate embrocations is pronounced by the author as having been "brilliant." The fever, in some attaining to 39.5° C., disappeared in the course of two days, the eruptions devoluted in precisely the same manner as in the woman first so treated, leaving no scars except slight ones in a few. The clouded mind (in some of the children) became clearer by the third day, while the next day these greeted the Doctor with a cheerful welcome. This report was written when even the 9 very sick children had almost recovered, the pustules having healed mostly without leaving scars or a trace of crust, excepting for small ones here and there in a few of the cases; only one child showed a single depression, the size of a millet-seed, in the face.

Doctor Traeger emphasizes particularly the fact that these applications exerted a direct soothing effect upon the pain and

itching of the sores; only perhaps at the start some slight burning sensation being experienced from the lotion. Indeed, the little sufferers, even the youngest, would call for these dressings.

Thus, then, Doctor Traeger concludes his note, there is presented to the medical profession, in the alcoholic solution of aluminum acetate, a remedy—where now we have none such for this disgusting malady—that combines in itself a number of most valuable properties; it is extremely simple and economical to use; it quickly allays that pain and terrible burning; it rapidly reduces the temperature to normal, simultaneously improving general wellbeing; it influences the retrogression of the pustules as does no other known agent; above all, it obviates pitting in most instances, but, at all events, it leaves fewer and lighter scars in the face.

CAMPHORATED WINE AS AN ANTISEPTIC VULNERARY

In connection with the foregoing item, the following abstract from a statement contained in a private letter of Richard Koch (in charge of a German reserve hospital) written to one of the editors of the *Therapeutische Monatshefte* (March, 1915, p. 175) will be of interest.

He does not give his reason, but Doctor Koch simply tells his friend that, in place of the widely employed aluminum-acetate vulnerary [see *ante*], he has been using—on a large scale, naturally—as a dressing for infected wounds the camphorated wine of the German Pharmacopeia. The "Standard Formulary" reproduces the formula for this vinum camphoratum in avoirdupois proportions, as follows:

Camphor.....	grs. 290
Alcohol.....	fl. drs. 6
Mucilage of acacia, U. S. P.....	fl. ozs. 2
Sherry wine.....	fl. ozs. 29

Dissolve the comminuted camphor in the alcohol. Slowly mix the mucilage with the wine. Then gradually and with constant agitation (to prevent precipitation of the acacia by the alcohol) add the camphor-spirit to the wine mixture. (Stated relatively, the proportions of the ingredients, by weight, are: Camphor, 1 part; alcohol, 1 part; mucilage of acacia, Ph. G., 3 parts; white wine, Ph. G., 45 parts.)

The writer of the letter then comments, saying: "It is not as generally known as it ought to be that camphor in this combina-

tion constitutes a wound remedy of most remarkable virtue. Under its influence, the edges of a wound do not present that pale, tumid appearance observed with other moist dressings; rather, when the skin still is vascularized, it has a normal pinkish color, the granulations are large and fresh-looking, the wound cleans up at a remarkably rapid pace, and, moreover, the pain is wonderfully soothed—a fact highly appreciated by the suffering victims. In view of these facts, ought we, perhaps, not to devote closer attention to the local action of camphor?"

This last remark undoubtedly deserves consideration; still, there presents itself the other question: What role does the alcohol play, both in this as in the preceding preparation, as also in various other spirituous vulneraries?

ANTITOXIN DOSAGE IN LARYNGEAL DIPHTHERIA

There is no place for conservatism in dosage when treating a well-marked case of laryngeal diphtheria. Albert J. Bell writes in *The Lancet-Clinic* for July 31, 1915 (p. 104). As a text for his remarks, he reports the case of a child suffering from this disease, and to whom he gave 21,000 units at a dose. This child already had received 5000 units previously, given by the attending physician. In spite of this large dosage, no marked improvement occurred for about eighteen hours.

As Doctor Bell shows, there always is the liability of mistaking laryngeal diphtheria for laryngeal croup, and, as we all know, this form of diphtheria is peculiarly prone to prove fatal. Under such circumstances, physicians should never be sparing in the dosage of antitoxin. Also, in order to insure immediate action, it is advisable to make the first injection—of 15,000 or 20,000 units—intravenously, introducing an additional dose of 15,000 under the skin or intramuscularly. Only when the antitoxin is introduced directly into the vein can we be sure of securing the maximum effect in the minimum time.

THE DOSAGE OF DIPHTHERIA-ANTITOXIN

We advise every reader of *CLINICAL MEDICINE* to make a mental note of the table below, which gives the dosage of diphtheria-antitoxin for different ages and varying degrees of severity. This table was prepared by Dr. William H. Park, director of the Bureau of Laboratories, of the New York

health department, and it is reprinted from *The Weekly Bulletin* of the department. It has been endorsed by the medical board of the Willard Parker Hospital and by the diagnosticians of the Bureau of Preventable Diseases:

	Mild Cases Units	Moderate Units	Severe Units	Malignant Units
Infants, 10 to 30 pounds in weight, (under 2 years of age)	2000 to 3000	3000 to 5000	5000 to 10,000	10,000
Children, 30 to 90 pounds in weight, (under 15 years of age)	3000 to 4000	4000 to 10,000	10,000 to 15,000	15,000 to 20,000
Adults 90 pounds and over in weight	3000 to 5000	5000 to 10,000	10,000 to 20,000	20,000 to 40,000

Cases of laryngeal diphtheria, moderate cases seen late at the time of the first injection, and cases of diphtheria occurring as a complication of the exanthemata should be classified and treated as "severe" cases.

In all cases a single dose of the proper amount, as indicated in the schedule, is recommended. For immunizing purposes a dose of 1000 units should be used.

It is recommended that the methods of administration be as follows:

Mild cases—subcutaneous or intramuscular.

Moderate cases—intramuscular or subcutaneous.

Severe cases—intramuscular, subcutaneous or intravenous.

Malignant cases—intravenous.

EMETINE IN THE CONGO. HEMORRHOIDS

According to a report made by Van Branden and Dubois, and published in the *Presse Medicale* (July 22, 1915), the introduction of the emetine treatment of amebic dysentery in the Congo has caused a decided reduction of its mortality. The authors prefer to administer the drug intravenously.

An interesting report is also given of a case of hemorrhoids in which the administration of 1 1-2 grains of emetine hydrochloride relieved the pain and caused shrinking of the tumor so that it was readily returned into the rectum.

NARCOTIC ANESTHESIA

An interesting paper upon narcotic anesthesia is contributed by G. Mason Astley to the March number of *The Pennsylvania Medical Journal* (p. 441). Doctor Astley has had considerable experience with hyoscine-and-morphine anesthesia and has come to the conclusion that this method of securing surgical analgesia is of special advantage in cases in which inhalation-anesthesia is contraindicated because of fear or nervous excitement; also, in operations about the upper air-passages, and in cases of lesions above the diaphragm, such as cancer of the breast or neck or of cranial or facial lesions where there

are no contraindications to the use of narcotic drugs.

The author does not believe that the hyoscine-morphine method of producing anesthesia is an ideal one to choose for young patients, the delirifacient action of the hyoscine being much more marked in these than it is in the individual of more mature years, and (we may add) morphine being peculiarly toxic in children.

Narcotic anesthesia always is contraindicated when pathological conditions are marked in the lung, with consequent limitation of the respiratory area. Astley also hesitates to employ it when there are renal complications, because of the well-known deleterious effect of large doses of opium or its alkaloids in chronic interstitial nephritis.

The chief advantages of hyoscine-morphine anesthesia, as enumerated, are: the ability to maintain a smooth, continued anesthesia, in counterdistinction to the intermittent anesthesia obtained when intratracheal insufflation cannot be availed of; the anesthesia is secured in a pleasant manner, without the depressing influence of fear; and it is followed by postoperative sleep of three to six hours' duration, from which the patient awakes without knowledge of anything having occurred.

Doctor Astley affirms that by complete cooperation of the patient with the attendants it is possible to anesthetize and operate upon an individual without leaving in his mind any recollection whatever of the procedure. Combined with local anesthesia, the narcotic method fills admirably the design of the anociassociation-technic of Crile.

An hour and a half before the time for the operation, 1-6 grain of morphine and 1-100 grain of hyoscine are injected subcutaneously; this dose being varied, however, according to the age and physical or other condition of the patient. No more than 1-4 grain of morphine should be given at this time, and it seldom is necessary to go as low as 1-8 grain. A second dose may be given at the end of twenty minutes, while sometimes a third dose is employed, provided the condition of the patient warrants. The third dose may consist either of morphine or hyoscine alone, according to the reaction of the patient to the one or the other drug, and the addition of apomorphine to the third dose frequently is of great value, in Doctor Astley's opinion.

Our own suggestion is, that the physician should err always on the side of safety. Rarely, if ever, is the third dose required, and usually two doses, consisting of 1-4 grain

of morphine and 1-100 grain of hyoscine each, are ample under any circumstance. The latter may be replaced by a few whiffs of chloroform or ether, and this usually is desirable whenever any serious operation is contemplated. By combining the hypodermic with the local anesthesia, after the method of Crile, the quantity of the narcotic required is reduced to even less than that indicated above.

EXOPTHALMIC GOITER

The symptoms of Graves's disease, according to Israel Bram (*N. Y. Med. Jour.*, Nov. 27, 1915, p. 1095), are the result of an excessive amount of thyroid secretion in the blood. The diagnosis is not always easy, especially in the early stages of the disease. For instance, it may be mistaken for pulmonary tuberculosis, hysteria, neurasthenia or diabetes.

In the majority of cases, according to Bram, it is unnecessary to resort to surgery. From his experience with 24 cases, he is convinced that almost every case of this disease, if diagnosed early, can be cured by nonsurgical treatment. Also, he feels sure that at least 75 per cent of all cases may be relieved without operation.

The remedy which he finds of greatest benefit in these cases of goiter is quinine hydrobromide, as advised by Forchheimer. It probably yields better results than does any other drug in the materia medica. These patients have an unusual tolerance for quinine, and the hydrobromide may be given in 10-grain doses three or four times daily, without producing any symptoms more serious than slight buzzing in the ears. The usual dose, however, is 5 grains three or four times a day. Under this dosage, quoting Forchheimer, "the tachycardia improves, the pulse frequently coming down, from 130 to 140, to 80 or 90 in forty-eight hours; secondly, the thyroid gland diminishes in size, by measurement; thirdly, the tremor and exophthalmos are the last symptoms to leave."

Given in connection with the quinine hydrobromide, Doctor Bram finds some other remedies of value; for instance, suprarenal gland or pituitary extract will be found helpful when there is low blood pressure; also ichthyol seems to have a very favorable effect upon the appetite and nutrition, while lecithin, which stimulates the resisting-power of the tissues, is especially indicated where the nervous symptoms are prominent. This latter remedy is said to control the tremor

and excitability even more effectually than will the bromides. In order to secure prompt results, the lecithin must be supplemented by a liberal diet; it is, contraindicated, however, when the digestive functions are disturbed.

Several other remedies are mentioned that prove of value in some cases; for instance, sodium phosphate, sodium salicylate, the calcium salts, iodine (especially in goiters of syphilitic origin or those undergoing degenerative changes), and ergot and digitalin, the two latter being useful because they overcome the relaxed condition of the heart and vessels.

Doctor Bram also affirms that physostigmine (eserine) often controls the tachycardia when other measures fail, appearing to be of benefit to some patients. Thyroid preparations he does not consider generally useful, indeed, they often aggravate the symptoms. Such sedatives as veronal, sodium bromide, and hyoscine hydrobromide (the latter used in 1-250-grain doses twice daily) may be prescribed to control the nervous symptoms.

Associated treatment includes rest in bed, suitable diet, hydrotherapy, pressure applied to the neck with a plaster bandage, and electrotherapy.

COPPER SALTS IN TUBERCULOSIS

Basing upon his experience with 5 cases of external and 15 or internal tuberculosis, H. Eggers (*Beitr. z. Klin. d. Tub.*; cf. *Muench. Med. Woch.*, Jan. 5) arrives at these conclusions concerning the action of copper salts in these conditions:

As has been demonstrated in animal-experiments and thereafter shown also by 5 cases reported by Strauss, copper possesses a definite affinity for tuberculously diseased animal-tissue; and this fact again was demonstrated clinically in the 5 cases of external tuberculosis observed by the author.

The statement is to the effect that the therapeutic action of solutions of copper salts, when locally applied to lupous and verrucous ulcerations, was surprisingly favorable; so, also, inunctions and the internal administration of the remedy seemingly benefited dermatic and surgical tuberculosis. In the cases of internal tuberculosis, the results obtained from the ingestion and inunctions of the remedy were not absolutely convincing. A trial of copper arsenite might be worth while.

Miscellaneous Articles

Eighty-six Years Tonight

SOMETHING lugubriously startling bodies forth as the blurred etching traced on Memory's accusing tablet softly revives.

The recurrence of this fateful anniversary of the stormy midnight just eighty-six years ago reflects that scene, with my fair young mother the central figure of teeming specters clasping her babe of sable destiny. And to-night a mimic tempest rages and a young deluge pours an infant flood without, as if wounded nature mourned and wept over the perversity of a suffering world.

A year ago tonight, I bent over the story of my past. I was telling you all, anticipating the tranquility of dreamless sleep ere this watchnight might fling sombre shadows in my weird sanctum. Yet, here I am, my mind fresh and crisp, reflecting the scintillation of the most noble and ennobling fraternity that adorns the human race. How fortunate to have lived in the clare-obscure shadows the resplendent brilliancy of this enlightened age vouchsafed me amid my remote seclusion; and to be here, one of you, in robust health and vigorous activity of practical usefulness, seems too incredible to believe.

I have passed through a terrible year of famine, revolution, and smallpox, with unprecedented scourges of other diseases. Smallpox has been of the most virulent, deadly type, often fatal in the early fever-stage, ere pustulation developed—a fact attributed to vitiated vitality from want of food; delirium entering with an initial chill in many cases. And in this fearful ordeal not one successful vaccination was made, all vaccine, even that from the more accredited manufacturers, arriving inert, due to the intense heat prevailing between here and the coast.

My post has been in the center of the pestilence, professionally alone. I have been obliged to combat the stupid ignorance of authority and the filthy carelessness of the people, both, at the inception, asserting the disease to be measles or chicken-pox or scarlatina, in each invasion, because of death occurring without pustules showing, until unprecedented mortality and some pustules elici-

ted sane reason. One plantation, a league from my office, had seventeen deaths in a week ere smallpox was admitted to be reveling there; the owner having had the disease at some former time and claiming to know it as well as I and being capable of diagnosing it. There had not been one recovery on the place. Several other plantations were infected, with a 100-percent mortality of earlier cases, most of them dying within three days of the initial chill. Those who survived to the stage of pustulation were nearly completely flayed, the thickly set pustules joining to the semblance of huge blisters, the nose, mouth, and throat being involved in a distressing manner. Up to the seventeenth death on the nearer plantation, I had neither been called nor consulted, my original smallpox pronouncement having antagonized the populace and the authority, because all the earlier cases died without pustulating.

The ghastly crisis called forth the masterful achievement of my career. The seventeenth death—the victim dying the day after the chill—prompted me to constitute myself an executive committee of one and to assume a dictatorship of the situation. The poor people had bought all the disinfectants in the zone and burned all the horns they could turn up, but despite which the scourge spread as only smallpox spreads. I collected a large number of kerosene cans and had them transformed into the shape of camp-kettles.* Early the next morning, I was on the nearest infected place, and caused all the clothing and bedding of the inhabitants to be boiled (I did not burn them, because they could not be replaced), and had boiling water thrown copiously on the dirt floors of the infected house, and then persuaded all the people to bathe with water as hot as could be borne without blistering.

*In Spanish America—as in other half-civilized countries—kerosene is imported solely in stout 5-gallon cubical tin cans. These are avidly bought up by the natives, who cut out the top and provide a bail by nailing a smooth piece of a branch across the middle. These buckets find manifold uses. Thus, all their hot water for laundry purposes is provided by setting these cans directly upon burning logs in the open.—Ed.

Three new cases developed during the night, and to these patients a 1-grain dose of calcium sulphide was given every hour, ten times, the fever and delirium disappearing entirely before the hour for the eleventh dose; but the fact is, I do not really know how much earlier the fever had abated, as I was actively superintending other features, having certainty that the doses would be given on time. I then extended the intervals to every two hours.

I also gave a heroic compound podophyllin purge, in the early part of the same night, to every one on the place, there being twenty-seven not yet stricken, but ten of whom had been directly exposed. To those ten I gave, each, ten 1-grain doses of calcium sulphide the next day, and one dose three times daily for the three following days. The three infected patients later received one granule every three hours. The other persons on the plantation who were said not to have been exposed were given full dosage of flowers of sulphur every morning and night for a week, with instructions to take a saline purge early in the morning, if the sulphur laxative did not prove sufficient. The three stricken patients were perfectly well in four days. No other smallpox cases occurred on that plantation.

The same process was repeated on other infected places, some half-dozen badly pustulated victims being treated. Calcium sulphide and echinacoid were alternated every hour. Also 10-percent phenol oil was applied to the nostrils, mouth, and throat, apparently with propitious effect. But this was not positively ascertainable with the influence of the calcium sulphide and echinacoid acting in the system, which helped to dry up the pustules quickly. The patients otherwise had uneventful recoveries, not one dying. New cases yielded as readily as those on the first plantation, the infection being arrested with them; and, where first new cases appeared on other places, the fever was broken with calcium sulphide; and no other cases developed under my prophylactic treatment.

Here we have a demonstrated certainty of almost immediate death to the smallpox-germ, incubated and actively established in human victims up to the highest infectious development; for, my observation, during fifty years, in the experience of combating Mexican smallpox, teaches me that the high fever, before pustulation supervenes, is almost equivalent to inoculation—the moribund and recently dead states being less perilous, while of potent infectious virulence.

I believe that infection is never conveyed by any person, however exposed, before incubation is complete and the fever-stage developed; not even in clothing not in actual contact, such as that being worn, or the bed of a smallpox patient. I can neither confirm nor deny the possibility of woollen clothing becoming infected in a degree to convey the disease by mere casual contact in a room with a patient, as a doctor or visitor, but am certain that cotton clothing is never such carrier—which are the goods used here. There have been numerous such instances in the recent epidemic, and not one infection that was not traceable to positive contact with the diseased person.

In my conception, the infective medium is so completely destroyed by the saturation of a person with calcium sulphide, especially when the dosage begins within a few hours after the inception of fever, that transmission of the disease is not possible to endanger exposed persons; yet, I deem it safer to institute prophylactic treatment of such persons.

I believe, however, that flowers of sulphur given to full saturation would immunize persons in actual process of incubation ere the fever-stage is reached; for, among seventeen persons said never to have been exposed on the first plantation, it is a dubious presumption that some of them did not have germs in their system, amid such terrible infection in closely huddled houses of such careless, filthy people; and those seventeen merely had the sulphur protection.

But calcium sulphide is indubitably a magical remedy, developing in the system some undefinable sulphurous compound, which is eliminated through the pores of the cutis, in strength sufficiently potent to prove germicidal in almost, if not all, cutaneous disease, smallpox the most formidably virulent among them. And I have established the fact beyond the latitude of peradventure that smallpox has been vanquished, in its various stages, by that subtle substance.

But, the 60-percent pharmacopeial calcium sulphide of commerce will not do—the 100-percent article of Burroughs, Wellcome & Co. of London, or of The Abbott Laboratories, of Chicago, is what is needed. There may be other makes as good, but I have not come across any, either among French or American products.

With an abundance of good live vaccine, I might have made a very different fight, but, perhaps with a higher mortality. I obeyed the spur of necessity, employing available makeshifts as weapons; and I regret to know

that the prophylaxis is not a permanent protection to persons who have not had the infection. It also remains to be verified whether the aborted cases will prove equally protective as if the disease had run out its course. Still, the fact of infection must insure higher-grade security than any cowpox vaccination can afford, notwithstanding that the disease was killed in the system.

For all that, calcium sulphide will ever be the grand emergency auxiliary in combating smallpox where vaccination lends no protection.

My uninvited battle with this frightful pest won me envy, but also great gratitude—gratitude in preponderating measure among the masses, the people whom I saved and those whom I protected. To the chagrined authorities, who nearly bankrupted the people in buying worthless disinfectants and employing quarantine-guards that did not quarantine, and also the quack fraternity, who assured the public that there was no smallpox, the lines of the immortal poet aptly and pertinently may be applied:

He who ascends the mountain-top will find
The loftiest peaks most wrapt in clouds and snow;
He who surpasses or subdues mankind
Must look down on the hate of those below;
Though high above the sun of glory glow
And far beneath the earth and ocean spread,
'Round him are icy rocks and loudly blow
Contending tempests on his naked head—
Such reward the toil that to those summits led.

Mexican hamlet authority exacts obsequious humility, a tribute I never pay, though friction rarely occurs; and never save in issues of public health.

But my humble, commonplace triumph over a mortal foe will provoke no envy or jealousy among the generous fraternity for whose pensive eye this greeting is written.

The life I live is so unlike that of any of you that the spice of your sauce would be gall and wormwood to me; and that is why my final days will pass in this wild refuge rather than where civilized companionship might fail to soothe. Once I was more absorbed; but now my leisure moments are not devoted to medical or to fictitious scribbling; and there is nothing new to read, as newspapers do not reach us now.

The practice of medicine has dwindled to only the better classes, the emancipated poor element being out of the province of medication, since the plantation owners no longer assume the responsibility; and the poor wretches are not able to buy corn, they have

free food no longer, much less free medicines. The famine has emaciated the race, many dying of sheer hunger, while anemia, that becomes dropsical, is rapidly doing the work of extermination.

The people are dying as of the plague, even the prevalent fevers being fatal. The low ebb of the blood stream responds to no treatment in the more desperate cases, while it surely, if slowly, declines. Such children are immedicable, mostly due to the vice of eating dirt; and I have tried to save some men and women among the more hopeless victims, some of whom crept into the convalescent state, but died of relapse, due to overeating improper food, there being no other. Even the middle ranch-class has neither meat, fowl, eggs, milk nor beans. Nor are fair corn and rice crops in process of harvesting, because of the scarcity of workers, the men all being in military service. Inundation has destroyed all crops, from near here below to the coast, and drowned the live stock, as well as many of the people. The concussions of European millions in war are creating a second deluge on earth. Such disastrous floods of high water have never been known here before, nor such torrid temperature, when the sun comes out on high.

The solitude of this big house in which I live and write, whose loneliness is unbroken by the chirrup of a cricket or the nibble of a mouse, is sometimes monotonous in the silent night—wakeful nights haunted by unbidden memories of the loved and the lost. It may be that this is a cherished weakness, yet, it is intensely human. Do none of you, bachelor, widowed or divorced brothers, however the estrangement, ever feel like moaning in your stifled sorrow?

Deep in my soul that tender secret dwells,
Lonely and lost to light forevermore,
Save when to thine my heart responsive swells,
Then trembles into silence as before.

There, in its center, a sepulchral lamp
Burns the slow flame, eternal—but unseen;
Which not the darkness of Despair can damp,
Though vain its ray as it had never been.

Such are little grains in the sands of life; and fortunate are those able to guard them at the bottom of sediments; yet, despite all effort, they persistently bob up in memory ever and anon; as, undoubtedly, they softly rise to all of you, even though some may be too proud to confess the inward weakness.

In the pursuit of fortune and some modicum of evanescent happiness, deemed to be of

mortal lot, the best of you fail to attain the coveted goal. The intervention is met of

Circumstance, that impersonal God
And Mischance, who makes and helps along
Our coming ills with a crutchlike rod,
Whose touch turns Hope to dust—the dust we all
have trod.

ROBERT GRAY.

Pichucalco, Chiapas, Mexico.

[Doctor Gray wrote this letter upon October 31, his birthday. I give this fact, because so many readers of *CLINICAL MEDICINE* are interested in the work of this wonderful man. I hope all of you are following his remarkable autobiography, an instalment of which will be found on page 52, this issue.—Ed.]

SOME EXPERIENCES WITH ANTITOXIN IN DIPHTHERIA

My first experience with antitoxin was on Thanksgiving Day, 1895. The patient was an Italian girl of seven years, whose throat was literally crowded with diphtheritic membrane. I saw her first in the morning, and in the evening I injected 15 Cc. of the serum—which, if I remember rightly, was one of 1000 units. This was on a Thursday. On Sunday morning, the child's throat was free from membrane and she was sitting up in bed and writing on her slate. By Tuesday, recovery was so far advanced that I paid my last visit. Of course, it really was too soon to leave her to herself; still, the outcome justified my action.

Since then I think I have never failed to administer antitoxin in every case of this dread disease. That is to say, diphtheria was a dread disease before the advent of antitoxin, as every physician who practiced in preantitoxin days will testify; for, since then its treatment has become a comparatively simple matter and the disease little to be dreaded. In the twenty years since this first case, I have lost but one diphtheria-patient, and that was diphtheritic croup. And I ought not to have lost even that one.

The most important lesson I have learned in regard to antitoxin is, that one *must use it early*. In all ordinary attacks, when this is done, neither large nor repeated doses are needed.

When antitoxin is administered on the *first day* of the disease, the mortality is practically *nil*. But, every day of delay increases the danger manifold, in growing ratio. Antitoxin stops the progress of the disease, but it can not undo the damage already done.

The further it has progressed, the greater the danger, and the larger the dose required.

When the patient is not seen or the disease is not recognized, or for any other reason the remedy is not administered until the disease has progressed for a number of days, large and repeated doses are called for. The same is true of those cases which are properly called malignant, even when seen early. Only few of my cases have been of this latter character, and I think I am safe in saying that in nine cases out of ten one early injection of 1500 units has proven sufficient, without repeating the dose.

As might have been anticipated, some mistakes were made in the early days of antitoxin. Our technic was not perfect. We did not understand the need of perfect surgical asepsis as well as we do now. Nor were we able at first to differentiate between the effects of the antitoxin and those of the serum which carried it. Neither was the method of preparation as perfect as now or the product as concentrated. Experience teaches. With strict asepsis, a perfected product, and a proper technic, the danger is so small as scarcely to be considered. Yet, some fatal accidents have occurred, be it from idiosyncrasy, improperly prepared antitoxin or imperfect technic.

An experience which I had about a year ago may be worth repeating. On the last day of November, a case of diphtheria appeared in one of our schools. The school was closed temporarily, and the rooms were fumigated; then the school was reopened and the work went merrily on. About a week after this—on December 6, 1914—I was called, toward night, to see a little girl who, with her two sisters, had been attending this school. I found her suffering from a severe sore throat, but no membrane was visible. Nevertheless, the symptoms, in connection with the known exposure, led me to suspect diphtheria. It would have taken at least twenty-four hours, under favorable circumstances, to have received a report from the State Board of Health, and I did not deem it wise to wait. Some may criticize this stand, but I find it sustained by the following from H. C. Wood: "When any case presents the clinical aspect of diphtheria, the antitoxin should be used at once. For educational purposes and for rendering definite our knowledge, the municipal laboratories are very useful; for purposes of treatment, the less attention paid to them, probably, the better for the patients."

So, the next morning I saw the little girl early and decided that the case was one of

diphtheria, though the membrane was as yet but elementary. I injected 1500 units of the antitoxin provided by our state board. The girl still was 'round about the house; within twenty-four hours she was improving, and she was never confined to her bed. There were no complications, and the attack was an ordinary one. In a few days, the patient was practically well, though no doubt she still carried germs in her throat.

However, on the fourth or fifth day after I injected the first case (I say the fourth or fifth; we country doctors are so busy looking after our patients that we do not always stop to make accurate records of each step of our doings—thereby lessening, I admit, the value of our reports), her younger sister showed signs of sore throat; so, without waiting either for membrane or report of culture, I promptly administered another 1500 units of antitoxin.

Right here, I may as well remark that probably the best thing I could have done at the outset of the first case, after administering the antitoxin to the sick girl, would have been to give an immunizing dose to every member of the family. You may criticize me for not doing so, and I will not complain. Suffice to say that I did not. And, now, as I think of it, it occurs to me that, had I done so, I should have lost the lessons I learned from an interesting subsequent series of cases, and, moreover, should have labored under a lurking fear that my first (and only) case was not diphtheria.

The second case went on like the first one, and in a week's time the patient was practically recovered. But, before this time came, the third, and last, child in the family was taken with the same symptoms. She, too, received 1500 units of antitoxin, and then went through the same brief course as did the other two. But, no sooner was she well on the way toward recovery, than the mother, who had been taking care of all the three children, was attacked in the same way; whereupon she received the same treatment. She was, perhaps, a little sicker than the girls had been, but was never continuously confined to bed and recovered rapidly.

Meantime the father, who, living on a country farm and away from any near neighbors, had been out of doors much of the time and thought, surely, he would escape, began to suffer from a severe sore throat. Owing to causes which I need not stop to state, I was not able to give him the usual dose of antitoxin until a somewhat longer time had elapsed than in any of the other victims.

The result was, that he was much sicker than any of the others, and was rapidly growing worse when eventually the remedy was administered—1500 units of antitoxin, no more, no less. Had I had another dose, I should have given it, but I did not. Again within a few hours improvement set in, and continued without interruption. He kept in bed more or less, but was never actually confined to it.

This ended the course of diphtheria in this family, the whole course taking less than a month. There were no near neighbors, and no other cases appeared.

The treatment, summed up so far as medical measures were concerned, consisted of antitoxin (1500 units only, in each case), antiseptic gargles, and saturation with calcium sulphide.

J. M. FRENCH.

Milford, Miss.

DIPHTHERIA-ANTITOXIN

It is quite general to speak of the action of diphtheria-antitoxin as being both prophylactic and curative. While the practitioner understands the meanings of these two terms, we are not strictly correct in the use of the word curative. In fact, diphtheria-antitoxin has no curative action whatever. In other words, it does not prevent the development of the diphtheria-organism, nor does it in any way participate in the repair of the poisoned body-cells. Its action, therefore, after the disease is established, is a neutralizing one, and not curative.

The development of the organism of diphtheria in or about the air passages produces violent toxins or poisons and, owing to the generous blood supply of these parts and the very superficial character of this vast capillary network, these poisons are absorbed by the general circulation as they are being formed. This accounts for the rapidity with which the disease manifests itself in many cases.

The clinical picture, so characteristic of this dread disease, is caused by the absorption of these toxins. Except in those cases where mechanical obstruction by the membrane causes death by suffocation, our fatalities are due to the destructive action of the toxin on the various cells of the body, notably the heart and liver. Fortunately in diphtheria, these toxins are absorbed by the blood and are found floating freely therein. It, therefore, resolves itself into what might be called a mechanical or a chemical process

of flooding the circulation with a sufficient number of antitoxic units to combine with and neutralize the toxin.

Many people possess a natural immunity, partial or complete, depending upon the presence of diphtheritic-antitoxic units in their blood; but in those persons who develop the disease, and who, consequently, do not possess any antitoxic units or only an insufficient number of them, it will be readily seen that the administration of a relatively small amount of antitoxin, previous to the onset of the disease, will fortify their blood stream, and this will be ready and available for neutralizing any toxin that may be formed later.

Thus, briefly and without attempt to enter into the minute details of the process of infection, it will be seen that the use of diphtheria-antitoxin may be grouped under two headings—that of immunization and that of neutralization, or, the so-called curative use.

Immunization is a simple process. It has been found by many years of clinical observation that one or two thousand units of diphtheria-antitoxin, administered upon exposure but previous to the development of the disease, will produce a passive immunity in the individual and protect him for several weeks. If the exposure is continued, especially in children, the immunization should be repeated after an interval of two or three weeks. In the treatment of the disease, however, each hour or day brings added danger and makes it much more difficult to combat.

We have taken the liberty of quoting rather fully from an article by Dr. Wm. H. Park and Dr. George P. Biggs, as published by them in the collected studies from the Bureau of Laboratories, Department of Health, City of New York, 1913. We feel sure that the perusal of this quoted portion will convey the necessity for the giving of large initial doses of antitoxin very much better than is within our power to do. We quote:

"Numerous experimental studies have demonstrated that a small amount of antitoxin will save when given before or shortly after the injection of toxin and that for each minute that elapses larger and larger amounts are required, until finally no amount will save. The following experiments, in which intravenous injections of toxin were followed by intravenous injections of antitoxin, are so striking that they are given, even though they are similar in some respects to the published results of others. The experiment already recorded indicates that a dose sufficient when given as a single dose is insufficient when

divided into several doses, even though the total amount is increased.

"A number of rabbits were given intravenously ten fatal doses of diphtheria-toxin. At different intervals of time, antitoxin was given; the following amounts were required to save at the different intervals:

"Amount sufficient to save life:

Given after 10 minutes.....	5 units
Given after 20 minutes.....	200 units
Given after 30 minutes.....	2000 units
Given after 45 minutes.....	4000 units
Given after 60 minutes.....	5000 units
Given after 90 minutes.....	No amount

"These results emphasize the need of haste in giving antitoxin in serious cases. Fortunately, in the ordinary case the diphtheria-poison has not reached the blood current in any large amount at the time the patient is seen. The severe septic cases have, on the other hand, absorbed a great deal of toxin when we reach them. Here, every minute's delay is of importance. In the moderate cases, delay in giving antitoxin allows the local lesion to advance, but, unless this becomes very extensive, the only harm caused is, delay in recovery. In the severe cases, the intravenous injection of antitoxin is always indicated, as no time is lost due to slow absorption from the subcutaneous tissues. In the mild and moderate cases, the intramuscular or subcutaneous methods suffice. The rapidity of absorption from the intramuscular tissues has been demonstrated, in animal-experiments, to be about twice that from the subcutaneous tissues. Its administration in actual cases of diphtheria, in our investigation, did not usually show such an increased rapidity of absorption. This is probably because the serum did not remain within the muscle-sheath. The following dosage of antitoxin is now used by us:

	Units in Cases			
	Mild	Moderate	Severe	Very Severe
Infants under 1 year....	2000	3000	10,000	10,000
Children 1-5 years	3000	5000	10,000	10,000
Children 5-9 years	4000	5000	10,000	15,000
Persons over 10 years..	5000	10,000	10,000	20,000

"These doses are selected after considering both the relative degree of danger at the different ages and the importance of size upon the dilution of the antitoxin. The antitoxin should be given intravenously in the very severe cases. In all others, the subcutaneous or intramuscular methods suffice to save life, but do not give as quick results.

"Much smaller injections will suffice to save life in the majority of cases, but the larger doses advised will produce quicker local and constitutional effects and will in the more severe cases undoubtedly save some lives which would otherwise be lost.

"It is conceivable that even larger doses might save an occasional life, but such a result is certainly rarely to be hoped for.

"The giving of antitoxin intravenously adds many times to its unit-effectiveness. Every 1000 units given into the circulation is worth at least 4000 given subcutaneously. When only small amounts are available, the antitoxin should be given intravenously."

RICHARD SLEE.

Swiftwater, Pa.

ANAPHYLAXIS AND "SERUM-SICKNESS" CAUSED BY ANTITOXIN INJECTIONS

The criteria governing the functional and other disturbances in anaphylaxis are more or less peculiar to each species.

Generally speaking, the symptoms produced by different proteins are quite uniform and characteristic in the same species, while in different species the symptoms may vary, because the same organs are not involved to the same degree; and then, again, the methods and degrees of sensitization vary with each species. The guinea-pig requires only a single minute dose of a given protein, then, after an incubation-period of ten days, the animal will be acutely sensitized to the same protein, and will remain so the rest of its life.

If the guinea-pig receives injections, say, every three days, of the same protein, it will show no symptoms. In other words, it will not become sensitized as long as these spaced injections are continued. If, though, the injections are discontinued for ten days, the animal will become sensitized. With the rabbit, spaced injections daily or weekly, will sensitize, and after about the sixth to eighth injection the animal will die of acute anaphylaxis. A single injection will not acutely sensitize a rabbit.

In human beings, the ordinary symptoms of "serum-sickness" are so familiar that it is hardly necessary to mention them: urticarial and erythematous eruptions, local and general edema, swelling of the lymph-nodes, pains in the joints, headache, weakness, fever, and leukopenia.

Any or all these symptoms may follow the first injection of therapeutic antisera. The symptoms usually appear after about eight to twelve days, and in these cases it is not clear how sensitization has been produced. It has been assumed that some of the serum remains unchanged, possibly in the skin at the point of injection, until enough of the substance required to cause a reaction with

the unchanged serum has been produced by the body. If serum is reinjected a week or more after the first injection, there may develop an immediate reaction, with marked local changes, even from a small dose of serum, and sometimes, though rarely, followed by severe symptoms and collapse. In these cases, the conditions and general picture of anaphylactic phenomenon are reproduced classically.

"Serum-sickness" and the conditions described were more common some eight years ago, when native sera were used, from horses immunized against diphtheria, and in a similar manner against tetanus, than we now experience from the partially purified antisera.

The first successful research on purifying these antisera for therapeutic use was carried out in the Research Laboratories of the New York City Health Department, eleven years ago, by Doctor Gibson. Although this first purification was a disappointment, so far as materially lessening the constitutional disturbances were concerned, it did stimulate further research, which the writer completed. Every year since then, the purification has been made more and more successful, and now constitutional disturbances are a rarity. We always shall have certain individuals hypersensitive to foreign proteins, just as certain individuals are hypersensitive to strawberries, chocolate, certain sea foods, and the like.

E. J. BANZHAF.

New York City.

[Doctor Banzhaf, as some of the readers of CLINICAL MEDICINE may know, is an authority on the making of antitoxin. In his work in the Research Laboratories of the New York City Department of Health, he has developed the method of concentrating and purifying the diphtheria antitoxin, as begun by Gibson. The method now generally employed by advanced manufacturers of this remedy is known as "the Gibson-Banzhaf method."—Ed.]

COLDS, AND THEIR TREATMENT

In your comment on Doctor French's thought-producing article, in the October number, on colds, you ask your readers for suggestions.

I have found, by long experience, that there are two kinds of "colds." One is simply a congestion of the mucous membranes of the respiratory tract, caused by the

cold driving the blood from the surface of the body and congesting the nose, throat, bronchi or stomach. The latter is not generally recognized by even the doctor. But I have seen many cases of "colds" of the stomach as positive as any of the respiratory organs.

The second kind of colds is germ-produced, and these belong to the influenza-type of disease. Treatment of the "cold"-colds is simple, if taken in time. First flush the skin—gelseminine, aconitine, atropine, quinine or pilocarpine will do this satisfactorily, if the temperament of the patient is understood, and then the remedies are adapted to each patient's requirements. The one who is troubled most with head- and nose-symptoms will be relieved quickly by gelseminine hydrobromide and keeping in bed. In those whose bronchi are most congested, aconitine and atropine are beneficial, or quinine for persons who are not susceptible to the effects, produced by this alkaloid, on the hearing.

The germ-produced colds require antiseptic sprays, calcium sulphide, and gelsemium. A spray of Lugol's solution often will work wonders in influenza. As soon as the acute symptoms subside, give the compound hypophosphites and nuclein. [Triple arsenates with nuclein is hard to beat for this stage.—Ed.]

For the cold in the stomach, prescribe mild cathartics and atropine, followed by hydrastis in some form.

Seen early, all these colds can be aborted, except in persons who have chronic catarrh of the respiratory tract or stomach. I have seldom seen a person who had a cold in the air-passages and stomach at the same time.

THOS. W. MUSGROVE.

Sultan, Wash.

[Doctor Musgrove's classification is interesting, and his method of treatment excellent. I am sure it will "work." However, I have my doubts about there being any purely "congestive" and non-infectious type of a cold. When the secretions of a patient suffering from such an ailment are examined they tell strange stories. For instance, Doctor Biehn has just been telling me about an unusual type of "cold in the head." A bacteriological examination of the nasal mucus revealed the presence of a strange-looking organism which "looked" like a Friedlander bacillus, but was non-capsulated. Further investigation showed it to be colon bacillus—in the nose, of all places!

As to the stomach "cold," I am reminded of an article which appeared in *The Illinois Medical Journal* recently, in which Hinkelmann showed that cases of the so-called "intestinal influenza" were really presenting enormous numbers of the bacillus of winter cholera. We live and learn!

Whatever the bacteriology of the "cold," Doctor Musgrave's method of treatment should commend itself to discriminating physicians. It can be built on to or modified to suit individual needs.

There is a type of colds tending to chronicity or recurrence. In my opinion, these should be treated with autogenous bacterins. Doctor Biehn is greatly interested in these cases and will advise you in any that are proving troublesome. Write him—and send him cultures from the secretions.—Ed.]

FOLLICULAR TONSILLITIS

Follicular tonsillitis, frequently associated with rheumatic complications, is the most common kind in our country practice. Its sudden onset with chills and fever, with temperature often high—up to 102° to 105° F.—swelling and pain, pain usually severe, with excessive secretion of mucus, and great difficulty in swallowing, are all characteristic and will usually serve to distinguish this from the more severe forms, such as diphtheria, croup, and streptococcic sore throat.

Treatment can be made curative, provided it is instituted early and is vigorous and thorough. A hot mustard foot-bath should be given, then the patient put to bed, well covered, in a half-sitting posture; for patients can scarcely ever be made to lie down.

A light ice-bag applied to neck from ear to ear is one of the best remedies to relieve pain and reduce engorgement; and best results are obtained if one can have a trained nurse to apply it, as I find so many people are afraid of it and will not use it as directed.

For an adult, I give calomel, 1-10 grain, calcium sulphide, 1-8 grain, the defervescent compound, and hyoscyamine granules, one of each once an hour (in severe cases every half hour) till ten doses have been taken. Then a teaspoonful of saline laxative once an hour, till three or four doses are taken; after which a dose two or three times a day, as needed. Also a teaspoonful ferrosalicylate (Wm. S. Merrell's) every two hours, till better; then every three to six hours.

In rheumatic cases, this gives most excellent results. If fever persists, the defervescent

compound is continued; and, if there is much depression, cactoid, strychnine, and nuclein are added—hypodermically, if much difficulty in swallowing exists.

If the patient can use a gargle, a solution of equal parts of listerine and peroxide of hydrogen is very good to clear the throat of mucus. For the pain and distress, a tablet of phenacetin and salol on the tongue makes one of the most effective remedies, and is especially good in streptococcic sore throat. The ordinary tablets do not taste bad, but would probably be better made up into regular throat-lozenges.

Neglected cases, and even some under the best of treatment, will end in suppuration, and, if spontaneous rupture does not occur in a reasonable length of time, I put a good-sized cork between the patient's teeth and, with the forefinger force an opening. I have discarded opening a tonsil with the knife.

W. A. MARNER.

Miles, Ia.

STREPTOCOCCIC SORE THROAT

The public in general consider sore throat (that is, not diphtheria) a simple matter and not infectious. People do not take any precautions with regard to the spread of the disease, and it is not an uncommon occurrence to see an entire family sick with tonsillitis, all having been originally infected from one member. The smear from the throat of such case sent to the health-office or bacteriological laboratory invariably comes back negative as to diphtheria.

The mode of onset is, as a rule, sudden. There is a chill, followed by a fever and the complaint of a feeling of sore throat. The throat at first is red and in a few hours a thin patch of membrane may be detected upon one tonsil. This membrane may, in some cases, even spread and involve the pillars of the fauces or the uvula. As a rule, it is not as thick as the diphtheria-membrane, but may be quite tenacious, and leave a bleeding spot when removed. The breath may be quite offensive, such as is usually found accompanying cases of diphtheria, and the patient very often complains of a feeling of weakness and prostration when attempting much exertion. Having been given such a clinical picture, I have found it to be almost impossible to make a differential diagnosis between diphtheria and a nondiphtheritic sore throat without the aid of the bacteriological laboratory.

My experience in streptococcic sore throat has taught me to consider this form of sore throat to be as grave a condition as a true diphtheritic sore throat. I believe that most of the cases of rheumatism following tonsillitis are of this type of infection. I know from clinical experience that cases of endocarditis may follow such an infection.

Some time ago, I was called in consultation to see a patient who had been operated upon by one of our throat-specialists here in the city. At the time of the operation, there was a slight inflammation and a small membrane upon one tonsil. The operating surgeon disregarded this inflammatory condition and proceeded to remove the tonsils by enucleation. In a few days, there appeared unmistakable signs of a mastoid abscess, and then the child was operated upon for this complication.

At the time that I saw the child, the temperature was running the typical course found in thrombosis of the lateral sinus, that is, the temperature would shoot from normal up to 105° and 106° Fahrenheit in an hour or two, then in a shorter time drop back to normal. Cultures made at the time gave an almost pure culture of streptococci. An autogenous vaccine was prepared, and this was used for about forty-eight hours; for, the parents seemed very much opposed to further operation. At the end of this time, the conditions being very desperate, another surgeon saw the patient, and he concurred in the opinion that the lateral sinus should be uncovered and possibly ligation of the internal jugular vein made—which finally was done.

The child eventually recovered, but all of this could have been avoided if the primary operation had been deferred until the inflammation then present had disappeared.

Another case which I had under my care was that of a young man who was attending college in one of our eastern universities. He contracted what he thought to be simple tonsillitis. He was under the care of the college-physician for about a month before he came home. I found one tonsil about half gone and a deep craterlike ulceration in the remaining portion. The anterior pillar also was deeply ulcerated. The entire throat was red and inflamed, making swallowing very painful.

I thought at first I had to deal with a syphilitic sore throat, but the young man absolutely denied any infection. A smear from the throat was sent to the laboratory and the report came back, with of the presence

of streptococci and Vincent's spirillum. I tried the usual antiseptics, such as argyrol, 5-percent solution of nitrate of silver, and the like, without getting any impression upon the ulceration. Eventually I used pure carbolic acid, neutralized with alcohol, and this healed up the ulceration.

There was another case of a young lady, a student at our university, who had a sore throat that in all particulars seemed typical of diphtheria; yet, three or four smears sent to the laboratory gave negative results; but, on the last report, the bacteriologist indicated that the infection was one of streptococci.

In about a week after the patient was dismissed, she began to complain of rheumatic pains in various portions of the body. The rheumatism became progressively worse, until at the present time she has become a complete invalid. There is a marked valvular murmur, due to endocarditis, and there is also a stiffening of the joints to such an extent that she can not get out of bed or feed herself. All forms and manner of treatment have been used in her case. Antistreptococcic serums, used in the beginning, had absolutely no effect. Rheumatic phylacogen was given a thorough tryout, through the courtesy of Parke Davis & Co., but with absolutely negative results. The salicylates were absolutely negative. She has tried all schools of practice, and I believe at the present time is under the care of a "magnetic healer." I cite this case, to show how seriously streptococcic infection in the system may affect a patient.

My treatment of streptococcic sore throat is, first to have the throat swabbed every four to six hours with a 10-percent solution of argyrol. As internal treatment, I saturate the patient with calcium sulphide. If there is much aching, I give aspirin or sodium salicylate. For the fever, I rely upon aconitine. In some cases, if the inflammation has subsided but the tonsils remain large and more or less sore, I put the patient upon phytolaccoid. Sometimes the red mercurius, in doses of about 1-1000 of a grain, will give excellent results in this form of sore throat. The combination tablet containing aconitine, bryonin, atropine sulphate, and mercuric iodide is ideal in any case of sore throat. In the beginning of the attack, I always give a course of calomel. I do this first, in order thoroughly to clean out and clean up the general system. I do it, secondly, because of the resolvent action of calomel upon glandular tissues.

There should always be an examination of the urine, as it is not at all uncommon for a

nephritis to develop. As in diphtheria, the diet should be nutritious and easily assimilated. The patients all do better when confined to bed. If possible, the patient should be isolated from other members of the family, and in all cases the parents should be warned that dishes and all else used by the patient should be boiled.

CLIFFORD E. HENRY.

Minneapolis, Minn.

SORE THROATS: HINTS ABOUT TREATMENT

For the sake of brevity and convenience, we will say there are just two classes of sore throats—the acute and the chronic.

The acute ones can all be greatly benefited, and many of them cured, by thorough spraying with a saturated solution of sodium salicylate and fluid hydrastis. Where there is any fever, aconitine, acetanilid, and sodium salicylate in solution should be given in small and frequently repeated doses, until all fever is gone. If the glands are swollen, tincture of poke-root should be added to the fever-solution; and where the patient is seen early and there is profuse secretion, atropine may be added to advantage. Of course, the bowels should be thoroughly cleaned out, and kept clean.

Diphtheria may go into this class and receive the same treatment, the antitoxin also being given when required; but, if the first plan is well carried out antitoxin will seldom be required. I have used it but once in fifteen years, and I have not lost a case of diphtheria in that time.

When there is a tendency to croup, the patient should be saturated with calx iodata, and the iodine preparation will help out in nearly all acute or chronic cases.

No matter what these troubles may be named, success comes in these cases by giving all the remedies to effect; the sodium salicylate should be pushed to saturation, and, where the glands are involved, the tincture of poke-root also.

All chronic cases are greatly benefited and many of them cured by mopping the throat out well with a solution of iodine, two or three times a week, commencing with a weak solution and gradually working up to full strength of the tincture. But, strange as it may seem, I never have had a patient complain of any pain or discomfort when I used the full-strength tincture from the very start. All chronic sufferers require, and should have, a good general alterative, or, what we older

fellows call a "blood-medicine"; and, as in the acute cases, the alimentary canal and all the glands in the abdominal cavity should be stirred up and put to active work. In other words, the whole sewer-system should be flushed and kept flushed. They have all become torpid and lazy and require whipping up.

M. E. JOHNSON.

Pittsburg, Kans.

[In diphtheria, no doctor should take chances or temporize. Give antitoxin in every instance, and give enough. Doctor Johnson has been lucky, but you or I have no assurance that our cases will do as well as his. Having had diphtheria in my own home, I tell you frankly that I fear it.—Ed.]

ACUTE SORE THROAT AND HOW I TREAT IT

The acute sore throat may be due to one of many causes, while its treatment rests largely upon the etiologic factor, in many instances; although, in the main, we use practically the same remedies in every case—that is, the agents for overcoming conditions peculiar to all.

A goodly number of us have come in contact with the sore throat due to streptococcic infection—the rheumatic sore throat—and it has given us a considerable amount of worry, as it does not, seemingly, submit to the ordinary remedies.

In this condition, as in rheumatism, I have found the salicylates giving good results in some cases. These should be pushed, as in rheumatism, to the limit, and, if used early, they will, I believe, give good results. It is possible that the strepto-bacterin or the streptococcic serum will give good results. They are, surely, indicated and should be given a trial. In these cases, atropine acts as a synergist to the salicylates, in that it carries the blood to the surfaces and thus relieves the local congestion or inflammation. Aconitine is another agent which has its indication, if there is general elevation of temperature. In all these cases, I find that the initial calomel purge, followed by a saline laxative, seems to make the subsequent treatment more effective. I have not employed the lactic-acid bacillus as a local application in the rheumatic sore throat, but it would seem to be indicated.

In the earlier stages of tonsillitis, I have found nothing which gives me better and quicker results than the tonsillitis compound,

consisting of aconitine hydrobromide, gr. 1-3000; bryonin, gr. 1-500; atropine sulphate, gr. 1-1500; and mercuric iodide, gr. 1-100. In the beginning, a tablet containing the above is given every half hour, until the atropine-effect is shown, and then at less frequent intervals, to hold such effect. In several individuals in whom tonsillitis had previously gone on to suppuration, the relief has been marvelous, the inflammatory process receding rapidly and with absolutely no purification.

I have in mind one patient who had quinsy with great regularity, for years, but would not submit to tonsillectomy, and who found relief, whenever his throat became the least bit affected, by the prompt use of the above combination. For the past four years, he has not had a single attack of quinsy. He told me that he is never without his tonsillitis tablets. As a synergist to the combination named, I paint the affected tonsil with tincture of iodine, if seen early, and this seems to have a good effect.

When an *acute laryngitis* is seen early, the initial purge of calomel, followed by a saline laxative, is given; and this, followed by aconitine, hyoscyamine, and strychnine at frequent intervals, to obtain the aconite effect as early as possible; and this, in combination with iodized calcium, 1-3 to 1 grain, at intervals of from two to three hours, will, as a rule, abort the attack.

For its local effect, a menthol gargle gives temporary relief; but, so far as a curative effect from gargles may be concerned, I have always had my doubts. Be that as it may, the gargle of menthol, in combination with alkalis, has a soothing effect, and, whether it assists in overcoming the condition or not, should be used because of at least the comfort given the patient.

The tonsillitis combination mentioned above is also useful in this condition. Nuclein, through its power to increase leukocytosis and thus to favor destruction of the infecting agents, should be indicated in every case. Calcium sulphide, as a general antiseptic and to control the exudate, should be pushed to the limit in all such cases. Hot compresses to the throat (epsom salt) give relief, as also do inhalations of medicated or plain steam. Both act as relaxants and favor a lowering of the congestive process. Potassium dichromate granules, to be dissolved on the tongue, are effective in some instances.

In *acute pharyngitis*, the initial purge is invariably indicated, preferably with calomel and podophyllin, followed by a laxative

saline or castor-oil. To relieve the local congestion, atropine and aconitine, pushed to effect, at short intervals of dosage. These also act to overcome any general rise in temperature. Potassium dichromate is also indicated in such condition and may be given either in solution or a tablet of 1-64 grain may be dissolved slowly on the tongue every hour or two. Iodized calcium, gr. 1; mercuric iodide, gr. 1-64; strychnine arsenate, gr. 1-128; phytolaccoid, gr. 1-6; with nuclein, m. 2, may be alternated with the potassium dichromate, with good effect. Cold compresses of epsom salt, to the neck, changed every hour or two, give comfort to the patient and assist in the effect of the other remedies. If the atropine and aconitine are administered early and pushed to full therapeutic effect, this condition is usually aborted.

There should be frequent examinations, to ascertain the infecting agent; and a bacterin, either stock or autogenous, may be added to the treatment, as outlined above, with good effect. Always suspect and look for diphtheria, and, if found, use the antitoxin in such dose as will be properly effective.

Some will tell us that *catarrhal croup* is invariably diphtheria; but, it is my belief that we may have a croupy sore throat, due to the micrococcus catarrhalis and streptococcus, and without the presence of the Klebs-Loeffler bacillus. In croup, no harm is done if diphtheria antitoxin be given, and this should be administered if there is the least doubt.

However, in the simple catarrhal form—nondiphtheritic—iodized calcium, 1-3 grain in hot solution, at intervals of from ten minutes to a half hour, seems to be a specific. If there is dyspnea and the congestion is marked, apomorphine, hypodermically, or lobeline, either hypodermically or internally, are indicated, alternated with iodized calcium. These act to overcome the spasm and to relax the throat markedly. Cold compresses to the throat are also useful in croup and give the child considerable comfort.

It goes without saying that the bowel should be emptied and thereafter kept clean. We know that many cases of croup are seemingly caused by previous heavy meals and a consequent retained residuum in the alimentary canal. After the initial purge, the intestinal antiseptics should be used, so that the bowel may be rendered and kept clean. Invariably bear in mind the possibility of diphtheria, in all instances, and be ready with antitoxin when there is the least suspicion of that disease.

This does not, of course, comprise all the throat conditions encountered, but is a list of the commoner ones—the ones we see in our everyday practice.

GEORGE L. SERVOS.

Reno, Nev.

ECHINACOID IN SORE THROAT

When treating sore throat, try echinacoid in connection with other remedies. Then, after the acute attack has subsided, for the reduction of the local congestion, try calcarea fluorica 7x and natrium mur. 3x. They may be given in combination.

D. E. CRIPE.

Hillisburg, Ind.

THROAT TROUBLES AND HOW I TREAT THEM

Follicular Tonsillitis.—First clean out the bowels thoroughly with calomel and podophyllin followed by a laxative saline. Occasionally, instead of the calomel combination, I give two compound cathartic pills. For reduction of fever I administer the defervescent compound (aconitine, veratrine, and strychnine arsenate), together with atropine in small doses. When indicated, I also prescribe bryonin; and I likewise give 5 grains of sodium salicylate (natural) hourly for a few doses. Calcium sulphide, 1-2 grain, and echinacoid, 1-2 grain, are administered every hour for the first day, and after that every two hours. As a gargle, I prescribe a solution of 5 to 10 drops of carbolic acid in an ounce of water, a little glycerin being added. This must be employed *hot*. I generally swab the tonsils once or twice with a 10- to 20-percent solution of silver nitrate, to be neutralized immediately by gargling with salt water.

Suppurative Tonsillitis.—The treatment of this form of sore throat is the same as the preceding, except that I open peritonsillar abscesses just as soon as pus forms.

Laryngitis.—If there is elevation of temperature, I reduce it with the defervescent compound granules, as described above under follicular tonsillitis. I also push emetine and calcidin, or sometimes apomorphine and calcidin. The bowels are kept open with the remedies already advised.

Diphtheria.—I swab the throat with the strong silver-nitrate solution, as described under follicular tonsillitis. Antitoxin is given as early as possible and in large doses, 5000

units being injected even in the very mild cases. In all the more serious cases I administer 10,000 units or more. To immunize members of the family, I give each one 1000 units of the antitoxin.

H. NOBLE CRANDALL.

West Springfield, Pa.

PERSONAL INSTRUCTION IN NON-SURGICAL SPECIALTIES

We have just learned from Dr. G. N. Murphey, of Paducah, Kentucky, that he is contemplating giving, at his home, a week's course of practical instruction in the non-surgical treatment of cancer, hernia, and hemorrhoids. It is probable that this course will be given in the week beginning February 20, although we presume this is subject to change. Readers of CLINICAL MEDICINE will recall the two papers on cancer that Doctor Murphey has contributed to this journal. Anyone interested should write directly to the doctor.

PECULIAR GLEANINGS FROM THE LAITY

I guess the old saying that "we never get too old to learn" is as true now as ever before. Here is a new one for me; however, it may be very old:

A lady who had been married for a period of ten years and had given birth to one child, a son, came to me in a pregnant condition and asked me to attend her in her next confinement. So, I ascertained as nearly as possible all of the facts regarding her former pregnancy and labor. She told me that the former physician who had charge of her during her former pregnancy and labor, every morning for three months before she was confined came to her residence and "used a stretcher on her to make labor easy." I guess I am a long way back on the shelf, but I have to admit that I have never heard of such a procedure. If I am behind the times, will someone put me right and tell where I can obtain one of the "stretchers"?

I was listening to a conversation between two ladies, over the telephone, and one of them had a child that had "croup," and the mother was telling the other one about it. The neighbor, who is always ready to give advice regarding the practice of medicine, told her that, if she would "tie a silk cord around the child's neck it will not have the croup, and, if it already has it, it is sure to relieve it." She said, "If you have not the

silk cord, just take a piece of silk cloth, and it will do about as well; but, really, it should be the cord." Strange that the men who have spent years in research have not discovered this fact—if fact it is.

I overheard a conversation between two ladies in regard to the cure of neuralgia. One of the parties was a sufferer from periodical attacks of the disease, and her friend was glad to tell her that all she had to do was to "procure a nutmeg, bore a small hole through it, run a string through the hole and tie the string around the neck," and she would "never have trouble again." She also stated that it would relieve the asthma. I have never tried it, but I can not believe it has any therapeutic effect on either disease. Do you?

A colored woman came to my office a few days ago and brought a child with her who had been sick about two weeks. I found that she had enlarged tonsils from inflammatory deposits, and this is the treatment that she had been giving the child: "Doctor, I heard that cow-chip tea, made from dry chips, would relieve the throat trouble, if the tea was made strong; also to apply a mass of the fresh 'pile' to the angles of the jaw, and it would always give relief." I asked her if the tea was strong, and she said it was, as she would taste each new batch before giving it to the child. I ascertained that the patient had drunk about three gallons of this abominable stuff before I saw her. I told her that I had always heard that the tea was to be taken by the *mother* of the child, instead of the child, but advised her not to do it, as she might get the "foot-and-mouth" disease after imbibing freely.

How many times have you been waiting for the uterus to contract and bring on pains for the expulsion of the placenta, after the child had been born, and some "kind lady" would say, "Blow in your hands and the afterbirth will come away right now"? More information for the M. D. from the "laity."

It is going the rounds in this country that, if you have warts, all you have to do is, "tie a knot in a *flax* string for each wart on the body, then 'spit' on the string and bury it at the root of an ash-tree, and the warts will disappear as if by magic." If this will do the work, why not treat them in this way these hard times, instead of using our drugs? Economy!

Have any of the brethren learned how to "tie off" the chills? If not, they are welcome to the following, and may profit thereby: Have

the patient go to a dogwood-tree and tie a string around the tree, then tie a knot for each chill he has had, then walk backward from the tree as many steps as he has had chills, then turn around and go away from the tree, and he will never have another chill—so I have heard.

If you ever have a patient with nose-bleed, tie a string around each little finger, and it will stop it—they say.

I am living in a community that has the average enlightenment, but these things are still in their minds, and we can not tell how many generations will pass before they are obliterated. I do not think there is enough teaching by the medical men of our country, or these superstitions would not persist. When I hear such rot as the above, I discourage it and ask people to reason in the matter, and see if there is any change made in disease by such foolish sayings or doings.

ARKANSAS.

NEW METHOD OF TREATING DIABETES

The new treatment for diabetes developed by Dr. Frederick M. Allen of the Rockefeller Institute for Medical Research has won the indorsement of a number of prominent physicians in this and other cities where it has been tested at hospitals. It is known as the starvation-treatment. Dr. Elliott P. Joslin, of Harvard Medical School, who is also connected with the Nutrition Laboratory of the Carnegie Institution has expressed his unqualified approval of this treatment. Another enthusiastic indorser of the "starvation-treatment" is Dr. Lewis Webb Hill, of the Massachusetts General Hospital, where the method has also been tried out for about a year and has been adopted for general use. Doctor Hill recently published a small book, to assist the general practitioner in adopting the "Allen treatment." This book tells of the results obtained in the Massachusetts General Hospital and presents a series of the diets used at the hospital.

It is no exaggeration to say that the advance in the actual treatment of diabetes mellitus during the twelve months just passed has been greater than in any year since Rollo's time. It seems that Allen's modification of the classical treatment of diabetes has been in use for only a comparatively short time, but it is already clearly proved that he has notably advanced the treatment of the disease. One of the difficulties likely to prevent the wide adoption of the treat-

ment at the present time involves the detailed knowledge of food composition and calorie value.

In carrying out the Allen treatment, the physician must think in grams of carbohydrate and proteid—it is not enough simply to cut down the supply of starchy foods, but he must know approximately how much carbohydrate and proteid his patient is getting each day.

Doctor Hill describes the treatment administered at the Massachusetts Hospital. The patients are kept on ordinary diet for the first forty-eight hours after entering the hospital, so that the severity of their cases may be determined. They are then put to bed and given no food whatever, except whisky in coffee, until they are sugar-free. Under this method, the system is very rapidly rid of sugar, all evidence of it disappearing in two or three days in most cases, and the longest length of starving any patient is four days. In a very few cases, however, eight or nine days were required; but this did not seem to injure the patient. When the patient is sugar-free, he is allowed to eat small quantities of vegetables.

When this meager diet is commenced, the vegetables must be boiled in three changes of water, to rid them of as much carbohydrate as possible. A glance at the diet of a patient after the original starvation shows that there is little danger of overeating.

Breakfast consists of 4 tablespoonfuls of stringbeans and 4 tablespoonfuls of asparagus, with tea or coffee; dinner, of 2 tablespoonfuls of carrots and three of spinach, with tea or coffee. To make up for the short rations earlier in the day, the patient is allowed 12 slices of cucumber and 6 pieces of celery at supper, with tea or coffee. The diet is gradually increased to include cabbage and onions, and in the third stage to include bacon and other foods.

One of the new features of Doctor Allen's treatment is, that the patient is never allowed to return to what is generally considered a normal diet. Previous to his development of the new treatment, it was generally considered by physicians that recovering diabetes-patients should take on flesh, to help build up resistance against "wasting disease." Doctor Allen argues that a patient should remain under weight always, even after recovery from the disease, to prevent a recurrence of its symptoms. In 44 patients admitted to the hospital, who were chosen because their cases were the most severe of a considerable number of applicants, it was

proved that it is possible to eradicate completely all traces of sugar by means of the starvation process. The greater part of the patient's stay in the hospital is devoted to the simple method of controlling his own condition through diet and in keeping down his weight.

Doctor Allen concludes that patients generally accept the radical treatment, with its quick relief, in place of weeks or months of privation heretofore used in stopping glycosuria.

L. K. HIRSHBERG.

Baltimore, Md.

[The Allen starvation treatment of diabetes now has "the center of the stage," and it is being very warmly praised. We believe every physician should be familiar with it—but should be cautious in trying to put it to the test. Somehow, it brings us back to that old, old lesson, which we have been trying to drive home all these years, i. e., *the importance of the alimentary canal as a factor in producing and perpetuating so many of the serious diseases*. It strengthens our faith in "cleaning out and keeping clean"—in the judicious use of simple laxatives; in the administration of intestinal antiseptics; and in the use of such remedies as cultures of the Bulgarian bacillus. "Look to the bowel!" That will continue to be the first word of the thoughtful physician.

In a recent number of *The Boston Medical and Surgical Journal*, Doctor Allen has suggested another somewhat revolutionary idea regarding diabetes. He believes these patients should be given plenty of exercise—not exhausting exercise, but enough to keep them hard and make them relish their meals. Walking, rowing, playing tennis, golf, are some of the things he suggests.—Ed.]

CURE OF IMPETIGO. — REMOVING IODINE STAINS

Last week I had a case of impetigo to treat. I tried all the remedies that "ought" to have helped, but didn't. I remember reading in the *CLINIC*, a month or so ago, the suggestion to use oil of turpentine. I decided to try that, for the condition was getting bad and the family was getting uneasy. Well, when I took the turpentine dressing off, the impetigo was much improved, and thereafter it was easily cured up with dusting-powders. That one issue of *CLINICAL MEDICINE* surely paid for a year's subscription—although I had to accept in payment from

these people a load of wood. I forgot to say that I kept the patient saturated with calcium sulphide.

I have found a new use for calcium sulphide, namely, to remove iodine stains. Just dissolve a tablet of the sulphide in a little water and rub this on the skin stain. The color comes off quicker than by any other way I have tried.

F. J. AUSTIN.

White Cloud, Kans.

MORE TREATMENT FOR MALARIA

Apropos of Doctor Spiedel's letter about the cure of malaria without quinine, published in *CLINICAL MEDICINE* some months ago, I wish to put on record with you a method I used successfully in 1898, when it was rather common, in this section, to find a number of soldiers crippled with Cuban malaria of a very obstinate type.

A captain of the 71st Regiment of the N. Y. National Guard, who had been treated in the ordinary way for months, supplied the first case. He had had two "congestive chills" that nearly proved fatal. During convalescence, I had him come to my office for tonic static electrical treatments and he promptly got strong and well. He was also taking quinine and tablets of iron, arsenic, and strychnine.

My next case was a "rough-rider," and he made such a prompt and marvelous recovery, after months of the usual treatment and persistent debility, that the news of it spread rapidly, and officers and privates of volunteer and regular regiments flocked in for "the cure." I tried to arrange with a young doctor of the neighborhood, to make blood examinations in all these cases, as I was too busy to do this myself, but he failed me. There was but one case where an examination was made, and he was reported to have had malarial plasmodia distinctly before he came to me. All symptoms disappeared after three treatments.

I have never reported these cases as I had not been able to get the blood tests made before and after treatment. I have used this method often since that time, with success and satisfaction to myself, but as it is somewhat severe, not everyone will stand for it, even to be cured. The treatment is as follows:

For about five minutes, I draw off from the patient, who is heavily surcharged with static electricity, big, percussive sparks with

the negative "large ball" electrode, being careful to avoid all tender spots. This sudden discharge of accumulated electricity in the body seems to give the malarial growth such a sudden shock as to destroy its vitality. No other treatment is required. Usually, the malaria and resulting debility disappear after the first treatment; but I have never felt satisfied unless six or seven of these treatments have been administered on alternate days.

All of my patients (forty-five or fifty) were anemic, much enfeebled, and subject to chills recurring at varying intervals (every 7 to 30 days). After treating the first three or four cases in this manner, I discarded all medication, other than the occasional use of a laxative tablet of aloin, belladonna, strychnine, and cascara. The recovery of health and strength has always been prompt and lasting in the cases I have been able to follow up. They all quickly lose their muddy complexions and anemic appearance, and acquire a good healthy color.

I would like very much to learn if others have had experience with this method of non-medical treatment of malaria, and if so, of their results.

THOMAS R. SAVAGE.

New York City.

THE CAUSE OF SCURVY

In the November number (p. 1068) of CLINICAL MEDICINE, Doctor Evans makes the assertion that potassium-poisoning is a cause of pellagra and scurvy; however, I beg leave to express a strong conviction that so far as scurvy is concerned he is mistaken. In a paper published as long as twenty-five years ago, it was conclusively demonstrated that in every instance of an outbreak of scurvy the salted meats in use emitted a stinking odor during cooking (namely, salt beef and pork and, in the cases occurring at the York Factory Hudson Bay Company port, north of Winnipeg, salted wild geese); while, on the other hand, with the same diet of beef, pork, and goose, salt-pickled, but free from decomposition-taint, no scurvy occurred among those people.

Now a word concerning the York Factory cases, the only place in the Northwest where scurvy was known to exist. The wild geese were shot in great numbers during their fall migrations. Their entrails were removed and then a little salt was rubbed inside each bird, which toward springtime would begin to give off a strong smell while being cooked.

The proof was positive that when this decomposition became noticeable scurvy soon followed a continuance of this diet. Please observe: nothing but salt, chloride of sodium, was used—no potassium nitrate whatever.

Furthermore, in the same paper I pointed out that the so-called "blackleg" that affected "lumberjacks" and railroad navvies living upon a diet of salted pork, principally, did not show itself until after the pork or bacon had become rancid, or rusted, and stunk when being cooked.

In other words, then, scurvy is a ptomaine-poisoning, more or less chronic, and is not caused by the small amounts of potassium salts present in pickled meats. I venture to say that the 12-pound ham Doctor Evans' patient consumed inside of ten days was "high" and unfit for food. The salting-process had but retarded decomposition, not prevented it.

A. S. THOMPSON.

Hawkesville, Canada.

MAGIC ACTION OF EMETINE IN AN INFANT BLEEDER

A little incident with emetine in the case of an infant bleeder may interest you.

Recently I was called to attend a baby, born thirty hours before, for what appeared to be a large bruise, with indurated base, on the left shoulder, arm, and chest. There were also one or two blue spots like birdshot on the opposite arm. The birth had been normal. The child weighed ten pounds and seemed normal; cord was normal.

The next morning I received a note that the babe was bleeding to death from the navel. The cord had separated, and twice before my arrival a large pad of surgeons' cotton, five layers of canton flannel, the flannel skirt, dress and blanket had been saturated with the blood. A scratch from its own finger-nails on the left cheek and the right eyelid were bleeding—the cheek so freely that the dress, neck, and shoulder were covered with blood.

As soon as possible part of a granule of emetine was injected into the thigh. Instantly, as if by magic, the hemorrhage ceased. Then the mother was given one emetine granule every two hours until the babe was nauseated, then one granule three or four times a day. There has been no further trouble of any kind and baby is gaining in weight and general appearance rapidly.

Please tell me what further treatment you would advise to prevent this little one becoming a "bleeder." I am satisfied that an all-cornmeal diet (freshly home-ground) for the mother during six weeks before the child's birth was the direct cause of this trouble. This is the ninth child born alive to this mother in thirteen and a half years. Her sixth child died when forty-eight hours old, bleeding from every mucous membrane, and it was spotted from head to foot. In this case also poverty had been responsible for an exclusive home-raised corn diet. The mother then had been compelled, while in labor, to look after their only and pet horse which had just cut a vein in the neck on barbed wire. The other children are all living and fairly healthy. Parents were both born in Norway.

O. E. W. SWAN.

Conant, Fla.

[It seems possible that there is an inherited tendency to hemophilia in this family. This "unit-character" is said to be transmissible. However, faulty diet may be a predisposing factor. Generous feeding, giving plenty of lime-carrying foods, is certainly desirable. We would also prescribe calcium lactate or chloride.—Ed.]

CURRENT COMMENT BY A COUNTRY DOCTOR

Is It Also Cause of Ectopic Gestation?—An article in *The Woman's Medical Journal* for June, 1915, in which Dr. Bertha Van Hoosen discusses the psychological aspects of painless childbirth, is intensely interesting, but, unfortunately, seems of more value as academic reasoning upon the many-sided question of future race building than as an aid to prophylaxis of woman's present-day needless labor anguish. If, as the author of the article referred to, in common with many others, considers sexual intercourse for other than procreative purposes (or, rather, intercourse on the part of a pregnant woman) to be largely the causative factor in painful childbirth, then the error is mainly a racial one, individual fault being but secondary to it. However, carefully gathered statistics relating to births occurring when during her pregnancy the husband had been absent from the wife of undoubted fidelity (Europe at present, should furnish data of this kind), as also of those illegitimate births in which the "only once" at the behest of the despoiler was the cause of pregnancy, would be instructive. Comparison of the character and duration of

childbirth among those living the ordinary married life of the western world with those limited sects teaching sexual abstinence during gestation and lactation, on the one, and, on the other, with harem women in Moslem countries, ought to yield valuable data.

It is to be feared, even were a complete and general education to be imparted upon the subject of sexual abstinence, that for the next few generations a tube of "H-M-C," a bottle of chloroform, and a little vaseline for anointing the woman's lips will still be advisable emergency equipment for the humane accoucheur. Fortunately, however, sex-subjects are being treated, even by the laity, from a more scientific and rational standpoint, and exaggerated sexuality eventually will cease to be a factor in life.

Right now elimination of sexual intercourse for pleasure—innocent or otherwise—is far from realizable, and it is to be feared that in the present stage of human evolution most male advocates of the new teaching either are morally on a much higher plane than the average or are men in whom "senility (or unvirility) is mistaken for godliness." Again I say that it is fortunate that the time is coming when sex-science may be approached through general literature in a rational way and a writer may treat the subject with a candor at least approaching that of Holy Writ, if not that of Shakespeare, without being accused of being a ribald imitator of Dr. Francois Rabelais.

Under some definite natural law, not yet discovered by any Mendel or Schenck, early in intrauterine life about half the humans become females. Since it is being more and more realized that this latter half, selected under that mysterious law, should have an equal say in all matters affecting the common weal of the race, present and to come, woman herself doubtless will largely determine the details of her emancipation from useless childbed agony, as well as from other factors detrimental to the coming life ideal. This I believe, although not agreeing with those feminist enthusiasts who contend that one result of the war will be the placing of woman back to the position of superiority in the community held by her in the remote era of the matriarchate, or mother-gens.

No, sister! All this talk about your being divinely sentenced to reproduce the race in travail is based upon misunderstood Scripture, and I call it unscientific theological rot. Your curse is purely imaginary. Yes, and I'll go further. I'll take my syringe, my H-M-C, and a few other articles of merit, and

then proceed to prove it; as will thousands of other doctors. Then I'll let you have the ballot and vote, with me, for a fuller cooperation all around. But that is as far as I shall go in this direction. I'll be like the Arkansas legislature which, when petitioned that it change the name of that grand old sovereign commonwealth, from *Arkansaw* to *Arkansas*, declined to do so. There I draw the line, and refuse to admit the superiority of women.

In connection with this subject, it has occurred to me that the hyperemia induced by sexual intercourse during early pregnancy may be the frequent cause of ectopic gestation. This condition does not occur in the animals, or, at least not often, so far as known; and it may be that disturbance, through copulative excitation, of the delicate physiological function governing the descent of the fecundated ovum, not being the rule as in humans, is the reason. The explanation of the pathological condition (ectopia) here offered should be as plausible as any yet presented. Originality is not claimed for the idea; still I have never seen it put forward.

The Senecio-Aureus Patient.—She had reached puberty, without full establishment of the functions of adult life. Various iron preparations had been prescribed, but, still, the patient remained chlorotic, even though some of these preparations contained arsenic. There was a greenish cast to her skin, the nails did not show true pink, the blood-count was deficient. Dysmenorrhea and amenorrhea alternated. The catamenial discharges often were intermenstrual and always wanting in color. The patient finally was withdrawn from the care of physicians and then took divers of those wonderful curealls advertised to be equally beneficial for "dawning womanhood" and for delayed menopause (*vide* testimonials run next to straight reading-matter in the daily and weekly *Boilerplate*). After a while, a physician again was summoned, on account of an acute attack of dysmenorrhea.

After learning of the previous watery discharges, intermenstrual in character, and because of her general chlorotic appearance, as well as the statement of the patient that she experienced frequent sensations as of "something heavy" in the pelvic region, senecoid was prescribed, in association with the immediately indicated remedies, namely, anemonin and viburnoid. This, after a careful examination, which revealed the typical symptoms of dysmenorrhea in an unusual degree, for this particular type of anemic patient.

The treatment was continued during two intermenstrual periods, and now that "green-sickness" is gone. Iron, quinine and strychnine had been given previously, and was well indicated. The same combination, less the strychnine, (in this case contraindicated) was given in conjunction with the senecoid. This was quinine ferrocyanide. Senecio is one of those drugs which, although not containing an active principle strong enough to produce toxic symptoms, exerts a well-defined and positive specific influence over the symptom-groupings that it fits. Users of the active principles, Eclectics and Homeopathsists all agree as to the efficacy of this remedy prescribed when its indications are present.

To assert that a drug is "inert" because it contains no active principle strong enough to exert toxic effect, hardly is logical. How can a plant reproduce itself in the age-old struggle for the survival of the fittest if it be inert and incapable of producing subtle chemic changes in the materials with which its environment has surrounded it? If capable of carrying out its own life-processes, dare I say that it is incapable of modifying physiological or pathological change in another organism? In our present outline knowledge of the cruder processes of physiological chemistry (crude as compared with the vast undemonstrated), have we the right to condemn empirically well-proven agents? And these thoughts bring up other thoughts concerning the assaults upon echinacea.

Just before frost caused the representatives of the venomous crotalus to start their winter-hibernation, I attended a negro bitten by one of these rattlers. The fang marks were visible on the foot, there was great swelling of the leg, the nervous and circulatory symptoms of snakebite were characteristic; worst of all, "We didn't kill de snake, an' dat make hit wo'se, yes-sah." He was seen three hours after the bite, hence, too late to open the wound and apply potassium permanganate or to suck the wound. Echinacea was the first thought. The form in which the drug was available was echinacoid, the concentrate, and this was triturated with alcohol and glycerin and applied under oilsilk clear up to the knee. The instructions were, to leave the dressing on for four hours and then redress with the same preparation, after soaking the leg in hot magnesium-sulphate solution. Internally, strychnine valerate, capsicum, cactoid, and echinacoid were given. Whisky was prohibited, and the bottle containing the proscribed article was condemned to destruction.

That darkey got well—and, of course, I hear the medical nihilist say that he would have recovered, anyway. Perhaps so, the danger from the bite of our North American snakes being exaggerated. But if anyone will kindly convince me that *echinacea angustifolia* is inert, it will save the expense of renewing my supply. *Echinacea* remains the emergency-remedy in blood-dyscrasias and infective processes; not to the exclusion of biologic therapy, but, still, it remains, as before introduction of this invaluable therapeutic advance, the instant reliance of the observant doctor. This is not a "snake-story," but a clinical statement susceptible of proof.

If the use of these (by some) alleged inert remedies is continued by men acquainted with the therapy and the chemistry of the newer synthetics, as well as with biologic therapeutics, there certainly must be some good ground for it.

Kerosene.—Relative to the very interesting article by Dr. Rigney and the editorial comment upon it in September *CLINICAL MEDICINE*, I frankly confess to more knowledge of the chemical possibilities of kerosene than of its therapeutic uses. *Petrolatum* and liquid paraffin I use extensively, but plain coal-oil has received at my hands probably unmerited neglect. I remember having been informed by a fellow practitioner, some years ago, that kerosene constitutes a splendid injection for gonorrhea, safe and efficacious, only the lack of color and its bad odor being objections to it. I then suggested coloring it with alkanet and disguising the odor with some other strong-smelling oil. The thought of giving it a trial was dismissed on thinking of the complex hydrocarbon group, with marshgas and incidental sulphur compounds to be dealt with in a commercial product derived from various sources, with only its illuminating power and explosive possibilities regulated. However, a product of uniform illuminating power and meeting explosive restrictions, such as modern coal-oil, should be fairly free from danger and has possibilities worthy of investigation as a whole as well as in the form of pharmaceutical separation.

In the use of the commercial kerosene except as a local application (that is, for enemas), doubtless immediate elimination from the body should be looked to. For high enemas, probably liquid paraffin would have served the doctor as well. The efficient carrying-out of high-enema technic, including position of patient, massage, and his resource efficiency in improvising a long colon-tube with which to use his bulk lubricant may have

been the cause of Doctor Rigney's success. Resource and efficiency: this is admitted while we eliminate discussion of the complex methane-product. Liquid paraffin can be used both ways in the alimentary product, without there being danger of absorption or of bad effects from some uncertain hydrocarbon. Therefore, when at hand, liquid paraffin can be used with safety, and it is as easy to carry in a buggy as the kerosene.

Cases of poisonous effect from the internal use of coal-oil are on record; and quite a serious one, from the free domestic administration to a child, recently came under my treatment.

Federal Licensure.—Let any physician of a dozen or more years' practice take the next set of state-board questions coming to his hand. Use the typewriter, pencil or pen and go at it, allowing no "self-cheating." Just call on the latent power of the memory and go to it bravely. Then mark the papers, with resort to textbooks, as if they were those of someone else. How many among us will make the required percentage? That is, unless for some reason two or three branches have been either specialties or hobbies of his. Try it, doctor—and then do not be surprised at the number of those "A" and "plus A" lads that "fell down." It will hurt no elderly physician to examine himself seriously, but it will help in two ways. The number of things that result in individual professional weakness will be discovered, as also the difficulty of passing a board examination when exigencies of existence require removal over the state-boundary lines.

It is safe to say that the practitioner of a dozen or more years' experience will have a pretty hard proposition, unless for some reason he has kept up on the technical branches. If a state requiring reexamination gives a few points of credit for years of practice they sure are likely to be needed—some mighty capable men have difficulty in remembering the rigamarole by which they placed even the carpal and metacarpal bones.

Federal licensing doubtless is coming—and should come. However, it should be a fair proposition to give older men an even break. It seems certain that a federal board, or any other board, could, by oral examination alone, discover a man's thorough fitness to continue the practice of medicine if he should desire to move.

It is quite true that doubtless there are a limited number of men who have received state licenses under former lax requirements, but who are not up in their profession and

have allowed themselves to become fossils or worse. On the other hand, there are many men who received good grounding—all that any school can ever give—under the careful instruction and personal supervision of the teachers of the older and smaller schools (many of them now defunct). These men have builded well on their foundation and are strictly modern, first-class physicians, even if some of them would have to study up pretty hard before they could pass an examination on modern chemistry and upon bacteriological details.

Alabama has, as yet, no reciprocity provision, but I believe that any old practitioner who has gone against its state board will agree with me that when he did he had the hardest few days' work he ever attempted, and that the certificate ought to settle the matter of capability anywhere: this even if he did make a creditable percent. He will also be convinced that the certificate of a modern state board should be good wherever the flag flies, also wherever international professional courtesy prevails.

A. L. NOURSE.

Sawyer ville, Ala.

EMETINE IN SOME CASES OF TUBERCULOSIS

Case 1. I began treatment for tuberculosis about a year ago. The man had been sick about two years and, as we all thought, was on his last lap of the journey of life. I began giving him supportive treatment—codliver-oil, with hypophosphites, nuclein, and the like. He improved somewhat and began to increase in weight, so, I concluded to begin very carefully with the tuberculin-treatment, in conjunction with the foregoing. For a while he continued to gain in weight and strength, so that he was able to ride alone in his automobile and to walk a considerable distance every day.

During all this time, I had the greatest trouble with his stomach and bowels. His cough was better, the right lung began to heal, but the stomach and bowels continued bad—either being constipated or too loose. To be sure, I had given him everything I could think of to promote elimination, using the mild chloride of mercury and saline laxative, the intestinal antiseptics and digestives, but seemingly could not make any progress. Finally, I stopped the tuberculin, in the hope that he would gain strength;

but the kidneys, stomach and bowels continued to trouble him, indeed, grew worse.

Then I began giving emetine hydrochloride, 1 grain every day, stopping all other treatment, except for an occasional small dose of cascara. In a few days, he began to improve. I continued the emetine for about three weeks, once a day, and for four weeks every other day; and now, after four weeks that he has taken nothing but good nourishing food, he is steadily improving, with only about one-half of a lung to breath with. He will not recover, but he will live at least a year longer—barring accidents. I am convinced that emetine hydrochloride will take care of all tuberculous conditions that relate to the intestinal tract.

Case 2. Woman. Strong tuberculous reaction with the Moro test, also specimens of fecal matter show tubercle-bacilli. Bowels continually constipated and about once every two weeks there are quantities of pus and blood in the fecal discharges. Catarrh of the nasal tract, with very offensive odor.

Treatment: Catarrhal vaccine (combined), every fourth day; emetine hydrochloride, 1-2 grain. After two weeks' treatment, she is better in every way; tongue clean, appetite good, no tubercle-bacilli in fecal matter. She is taking nuclein, 15 drops of the solution three times a day, under the tongue; also codliver-oil with hypophosphites. She takes a pint of cream and three or four eggs a day, and is doing finely, although two weeks ago she hardly ate enough to sustain life.

Emetine is taking care of the intestinal tract, enabling her to take plenty of food, which is the prime factor in the treatment of tuberculosis. I shall probably give tuberculin when she gets strong enough. This woman will get well.

T. M. STEWART.

Canistota, S. D.

TWO OBSTETRICAL ANOMALIES: RETAINED AMNIUM AND RETAINED LOCHIA

The following two experiences may interest some of the readers of CLINICAL MEDICINE:

1. A woman, half-breed, 21 years of age, primipara, gave birth to a boy at 4:10 o'clock in the morning, no doctor being in attendance. In the evening I was called, because the "rest" had not come as yet, and reached the patient's home at 8 o'clock. The woman was lying on the floor; she was looking well, but was in pain.

The first thing I discovered was, that her abdomen was still as big as though she had not yet given birth to the child. Was this a case of internal hemorrhage? was my first thought; but the face and pulse indicated that it was not. The next suggestion was, that it was a case of twin pregnancy. However, palpation and auscultation convinced me to the contrary. Also, the patient had passed a sufficient quantity of urine, both before delivery and afterward, which satisfied me that the protuberance was not due to retention of urine. What, then, was it? A careful vaginal examination disclosed that the placenta had passed out of the uterus and was lying in the vagina. Gentle expression brought it out complete. And, still, the abdominal enlargement persisted.

The patient had already been ordered to bed, and I now introduced a uterine dilator into the os. Slight dilatation was followed by the flow of a large quantity of amniotic fluid. The "tumor" vanished, the pains disappeared, and the patient immediately felt relieved. This was two years ago. The other day I saw the woman in my office, and she complained about not having become pregnant again.

2. A woman, in labor, age 20, primipara, who since her first menstruation at 16 had suffered from acute pains at every period. The os was very slow in dilating; however, the child was born normally, although the placenta was adherent and a ring formed in the middle of the uterus. The uterine flow was normal the first day, but on the second day the quantity became very small and on the third the discharge disappeared entirely. That night there was a slight rise of temperature. I tried uterine douching, but in order to introduce the fluid dilatation was necessary. A large quantity of offensive discharge followed, resulting in an almost immediate fall of temperature to normal. However, the next afternoon the discharge ceased again, and there was none at all for the two succeeding days, this being followed again by a rise of temperature up to 101° F.

Fearing the possibility that shreds or fragments of the placenta had been retained, I decided to curet, but again found the os uteri tightly contracted. Forcible dilatation was followed by a discharge, as before, but the uterus proved clean.

The temperature again fell to normal, to my great satisfaction. In order to prevent reaccumulation of the fluid, I left a rubber drainage tube in the uterus, but the fluid did not increase, so that twice a day the os had

to be dilated in order to permit of irrigating the womb, until finally the discharge ceased.

I tried several remedies calculated to relax the contracted os, but apparently without avail. Was there anything else I could have done, in view of the fact that the condition was not discovered previous to pregnancy?

EMILE BOISSONNEAULT.

Grouard, Alberta, Canada.

[From the Doctor's history, it seems probable that in the first case mentioned there was a very precipitate labor, the fetal head being forced into the os so quickly as to block it completely and thus prevent the escape of the amniotic fluid. After the birth of the child, there must have occurred an immediate blocking of the uterine outlet by the placental membranes, followed by contraction at the cervical ring, thus preventing the escape of the fluid. Perhaps someone can suggest a better explanation; if so, he is invited to favor the "family."

Case 2 seems to be one of hourglass contraction, in which, happily, the placenta was delivered without postpartum hemorrhage setting in. From the Doctor's history of the case, it seems probable that there existed an obstruction-ring prior to pregnancy; this ring, moreover, being responsible for the painful menstruation of which the young woman complained.

We shall be very glad if any reader of CLINICAL MEDICINE will comment upon these cases and suggest an improvement of the Doctor's technic.—Ed.]

CYSTS OF THE TONGUE IN THE NEW-BORN

Cysts of the tongue in the newborn are not of common occurrence. Occasionally we do encounter in the literature reports of such cases, but in most of these instances there exists considerable doubt as to the exact nature of the condition. The writer has met with two definite cases of cysts of the tongue in the newborn, and in both the type of cyst proved to be the same.

Case 1. The babe weighed 9 1-2 pounds and, apparently, was sound. The cyst on the tongue was not noticed until an effort was made to cleanse the child's mouth. Then a hard and nodular mass was felt, about the size of a hazel-nut. Upon closer examination, it was found that there were two small masses instead of a single large one, and both opening through a common channel.

The masses were plainly seen on the anterior surface of the tongue, just beyond the tip.

Case 2. This was an 8-pound baby, robust and sound, but its difficulty in breathing gave immediate suspicion that something was wrong. Examination of the mouth showed a condition commonly known as ranula. The writer having witnessed a similar condition only a short time before, quickly performed the simple operation necessary, aspirated and drained the cyst, and thus afforded the infant immediate relief.

The first case did not prove so serious or urgent; in fact, nothing of a surgical nature was necessary, until the mother found that the baby was unable to take the breast. The second case undoubtedly also would have had trouble in nursing.

Case No. 1 was attended to by the hospital staff-surgeon, who pronounced the condition a retention-cyst. It is interesting to note that, while all the material was drained out at the first operation, it was necessary to repuncture the sac, since it readily filled up again and so caused the same obstruction as before. However, after the baby was about ten days old the whole condition disappeared.

Case No. 2 was entirely under my own observation. In this case, the cyst was found to extend to the posterior surface of the tongue and slightly adherent to the base of the mouth. The procedure of relieving the condition was the same as described in Case No. 1.

The writer subsequently has taken the trouble to review the literature on this subject, but has discovered, to his great dissatisfaction, that there is little, if anything, in particular said on this subject. Ranula is quite exhaustively discussed, but there are only a few cases which appear to be in any way similar to the one described here. The literature tells us that, as a general statement, it may be taken that retention-cysts of the mucous glands may occur in any part of the mucous coat of the alimentary tract. Some reports cite instances in which small cysts embedded in the muscle of the tongue have occasionally been found.

These cysts are the result of some obstruction of the ducts of the salivary glands, which, owing to the obstruction, become cystically dilated. If the tumor presents itself in the floor of the mouth, beneath the tongue, it is given the name of ranula, while, if it takes its position on the anterior surface of the tongue and without pressing in any way on the floor, it is usually of the retention-

type of cysts. Not infrequently dermoids and other varieties of cysts are mistaken for retention-cysts of the tongue, but these two must be carefully differentiated.

ABRAHAM R. HOLLANDER.

Chicago, Ill.

STRAIGHTENING OUT ANOTHER HARRISON-LAW TANGLE

We have been informed that the United States Commissioner of Internal Revenue has ruled that the practice of renewing narcotic prescriptions by indicating thereon the druggist's serial number will no longer be permitted, such a practice being inconsistent with the ruling given in Treasury Decision 2213. It is stated that this practice was never allowed by the Department for the renewal of prescriptions for narcotic drugs alone, but it was permitted for a time in some instances, when physicians had forgotten the exact proportion of ingredients of a preparation or remedy containing narcotic drugs and desired to renew the prescription therefor.

It is well to remember that at all times the name and address of the patient, the date, the name of the ingredients and the respective quantities, the full name and address of the physician as well as his registry number, must appear on each and every prescription calling for narcotic drugs, preparations or remedies coming within the scope of the Harrison Narcotic Act.

STATE BOARD EXAMINATION QUESTIONS

We are constantly receiving letters from physicians who wish us to publish some of the state board questions used in the various states in the examinations for medical licensure, together with answers, and comments on the licensing laws, reciprocity, and the like. Accordingly, we have decided to give a small amount of space to this subject—for a few months at least. Whether this feature will be continued or not will depend upon how our readers like it. Please let us know if you approve or if you think it a waste of space. CLINICAL MEDICINE tries to do the greatest good to the greatest number of its readers.

The questions given this month were those used at the California examination of June 17 1915. Only half the topics are covered this month. The balance will be printed in February, together with answers to the questions printed in this issue.

ANATOMY AND HISTOLOGY

1. Give formation and branches of the lumbar and sacral plexuses. (May use diagram.)
2. (a) Classify articulations; give a typical example of each class.
(b) Discuss the hip joint, naming all muscles passing across the joint.
3. Discuss the distribution and central connections of the auditory (8th cranial) nerve.
4. Discuss the bony thorax.
5. Discuss the pleura, giving attachments and reflections, also external markings of its boundaries.
6. (a) Give the action of the sterno-clideo mastoid; singly and together.
(b) Give the action of the psoas magnus.
(c) Serratus anterior. (Give action of)
(d) Deltoid. (Give action of)
(e) Trapezius. (Give action of)
(f) Ilio-costalis. (Give action of)
(g) Latissimus dorsi. (Give action of)
7. (a) Describe by diagram, the longitudinal section of the femur, showing outline and histological structure, showing normal development and regeneration.
8. Give the essential differences of the appearance and structure—gross and microscopic—of the mucous membrane of the duodenum, jejunum and ileum.
9. Give the histology of a medium size artery.
10. Give formation of the tributaries of the portal vein; give most inferior tributary.
11. Discuss the cervical sympathetic ganglia; give location, tributaries, and branches.
12. Give histology of the mammary gland; make drawing showing typical histological section.

Answer ten questions only.

PHYSIOLOGY

1. (a) Discuss hæmolysis.
(b) Discuss the origin and fate of the leucocytes.
2. What is the relation of the nerves to the movements of the intestines?
3. Discuss the influence of the nervous system upon respiration.
4. Define the following terms: Inhibition, diffusion, osmosis, diapedesis, perimetry.
5. Discuss the metabolism of the embryo.
6. Discuss color blindness.
7. Discuss inhibition in reflex action.
8. Discuss the relation of the rods and cones to vision.
9. Discuss the variations in the volume of the brain due to respiration.
10. Discuss the sensation of hunger and thirst.
11. (a) What are the sources of uric acid?
(b) Where and how is uric acid formed?
12. What effects are observed after section of a cutaneous nerve?

Answer ten questions only.

CHEMISTRY AND TOXICOLOGY

1. Name and give the formulæ for five salts of mercury.
2. What is the formula of hydrogen peroxide? What is its action upon silver oxide; upon finely divided platinum?

3. What is "bleaching powder"; its formula? How does it act as a disinfectant?
4. Define and discuss diffusion and osmosis.
5. Describe and discuss briefly HNO₃; its chemical and physical properties.
6. Discuss arsenic (its occurrence, properties, toxic effects) and describe the use of one antidote.
7. Discuss lead poisoning and two effective means of overcoming the same.
8. Define "physiological antidote" and "chemical antidote" and give an example of each.
9. Discuss hydrargyris.
10. Discuss the indications and contraindications for the use of stomach pump.
11. Discuss carbolic acid poisoning and an efficient method of treatment.
12. Discuss the toxic effects of yellow phosphorus.

Answer ten questions only.

BACTERIOLOGY AND PATHOLOGY

1. What changes are found in a stained blood smear in primary pernicious anemia?
2. What elements might you find microscopically in the sediment of a normal urine?
3. Describe the microscopic field seen in: (a) a negative Widal reaction; (b) a positive Widal reaction.
4. What do you look for in a microscopic examination of stomach contents?
5. Define eosinophilia; name several conditions.
6. What are casts? Describe at least three varieties and tell under what diseased conditions they are found.
7. Discuss briefly the etiology of chronic interstitial hepatitis, or cirrhosis of the liver, and describe the microscopic appearance of at least two varieties.
8. Describe embolism, infarction and thrombosis and briefly discuss the pathology of each.
9. Define: (a) carcinoma; (b) sarcoma. Give the relative frequency of occurrence in (a) breast; (b) liver; (c) bone.
10. Describe the gross appearance of a bone at the site of osteomyelitis.
11. What are the causes of jaundice and how do they operate to produce this condition?
12. Define: (a) cloudy swelling; (b) atrophy; (c) malignancy.

Answer ten questions only.

MATERIA MEDICA AND THERAPEUTICS, PHARMACOLOGY, INCLUDING PRESCRIPTION WRITING

1. Name four commonly used mercury compounds (U. S. P.) and discuss briefly their therapeutic uses.
2. Discuss fully the possible therapeutic effects that would be expected of the following prescription:
Rx
Tinct. nucis vomicæ..... 5,0
Fluid extracti cascariæ..... 10,0
Tinct. cardamon comp..... 25,0
Tinct. gentian comp. q.s.ad.100,0
M.Sig. Take one teaspoonful in half glass of water t.i.d., before meals.
3. What is apomorphine? State dosage, indications, modes of administration and action.

4. Discuss the indications and contraindications for the use of the following:
Rx
Kalii iodidi 18,0
Aque dest 60,0
Syrup sarsaparilla comp.
q.s.ad 125,0
M.sig. Take one teaspoonful, well diluted, t.i.d. p.c.
5. Describe and discuss three different modes of administering drugs for therapeutic purposes.
6. Discuss the conditions that modify the effects of drugs.
7. (a) Discuss the dosage of drugs as influenced by age, sex, size and weight of the individual.
(b) Define idiosyncrasy and discuss one example.
8. (a) Discuss oleum ricini, its dosage, therapeutic action and indications.
(b) Discuss three contraindications for the use of intestinal evacuates.
9. Discuss the systemic action of alcohol (internally administered).
10. What is adrenalin? How is it administered? What are its principal effects?
11. Discuss salvarsan (its principal properties, dosage, best mode of administration, indications and contraindications).
12. Describe the bromide salt most commonly used (as to its physical properties, dosage, therapeutic action and untoward effects).

Answer ten questions only.

KEROSENE ENEMAS, AND THE RECTAL TUBE

It is now some twenty years since I inserted the full-length of a 2-foot soft-rubber rectal tube, to dislodge an obstruction at the ileocecal valve. About 2 quarts of kerosene was injected, and the difficulty was soon removed. I have repeated this in the case of other patients since then.

To succeed in this operation, it is necessary to keep the tube and bowels constantly inflated with warm water while inserting the same. The tube must be of good soft rubber, with thick walls, and at least 1-2 inch in diameter. A soft, over-flexible tube will double upon itself when making the turns in the large bowel.

V. E. LAWRENCE.

Ottawa, Kans.

AMEBIC DYSENTERY TREATED WITH EMETINE

An interesting case of amebic dysentery was recently referred to me by a brother physician. The patient was a woman, and when I first saw her, on September 24, she had been ill for four weeks. She had a very weak pulse, averaging 120; the temperature ranged from 101° to 103° F. She was pass-

ing at that time from twelve to fifteen stools in twenty-four hours, the discharges containing much blood. Although I do not have a complete laboratory at my disposal, I nevertheless was able, with my microscope, to detect the ameba in the fecal matter; thereby proving the correctness of the diagnosis made by the other physician, Doctor Hubbard, of Indiana. Almost everything was tried that might be useful in amebic dysentery, but with poor results. We then decided to give emetine a trial. We began with three 1-2 grain ampules in the twenty-four hours. This treatment was continued for twelve days. By this time, the number of stools was reduced to four daily. Thereafter the patient was given one 1-2-grain ampule of emetine daily for fifteen days.

In this case, the emetine certainly did the work. However, other treatment was employed, which undoubtedly contributed to this woman's cure.

R. E. LEE.

Oxford, Ind.

THE TREATMENT OF SUPPURATIVE OTITIS MEDIA

The failures recorded in the treatment of suppurative otitis media are so familiar to the aurist that comment is unnecessary. Following along lines indicated by the best authorities, I have had a modicum of success, but it is to the failures that I will direct my attention. After all that has been said on the subject, I have chosen to place before my confrères the result of my recent work in effecting cures in those cases which usually baffle our best efforts. A brief summary of the few cases I have selected at random will, I think, bring to mind conditions with which we are familiar.

In the clinics of hospitals and in private practice, I have looked with despair upon such cases, and because of my utter helplessness I determined to find some measure that would at least inspire hope.

In the course of my patient work in this direction, I have evolved an antiseptic solution that has given me most gratifying results, and I take pleasure in submitting herewith the formula of the same, as follows:

Acetanilid.....	grs. 32
Resorcin.....	dr. 1
Boric acid.....	drs. 2, grs. 24
Formalin.....	m. 20
Alcohol.....	ozs. 2, drs. 3
Water, enough to make.....	ozs. 16

Ten months ago, a colleague referred to me, for an opinion, a case of chronic suppurative

otitis media. The patient, a young woman, age 19, in perfect health, complained of a discharging ear since her early childhood. On June 8, 1914, a radical operation upon the mastoid bone had been performed, and on September 28, of the same year, she was again operated upon for the removal of necrosed bone. The operations evidently had been done with perfect skill, but the ear continued to suppurate.

In giving my opinion, I suggested the use of an autogenous vaccine, which advice was followed; and a series of fifteen injections, at regular intervals, were given. However, no improvement followed. During that period, I wish to mention, proper local treatment was not overlooked. Thinking that, possibly, the vaccine was at fault, I had another vaccine made; still, after repeated injections of this, the condition remained unchanged. It was at this period that I began treatment with the solution described, with the result that in four weeks the cure was complete.

My success in this case was such a revelation to me that it inspired me with the greatest confidence.

The following cases, I think, are just as interesting, and I will report them briefly:

Mrs. M. R., age 21, had a discharging ear since childhood. Radical mastoid operation was performed in November of 1913, without relief. Vaccines and local treatment availed little. July 16, 1915, treatment with the above solution was instituted. On July 27, her ear was absolutely dry. Discharged cured, and cure holds good at this writing.

L. V. C., age 15, had a suppurating ear for ten years. Was treated by several specialists. December 22, 1913, radical mastoid operation was performed. Six months later, curettement of eustachian tube was done. The suppuration continued. Then fifteen injections of an autogenous vaccine were given. No results. July 29, 1915, I began treatment with the solution, and by August 13, 1915, the ear was dry. The patient stated that this was the first time his ear had been dry. This case is still under observation.

Mr. A. W., age 38 years, had discharging ear since 1895. Consulted a specialist in the city in 1912, who did a radical mastoid operation. The patient remained for treatment and was discharged as cured at the end of two months. The ear continued dry for about eight months, then began to discharge again. In 1913, the patient returned for treatment, remained only a short while, and left without benefit. In 1914, he again returned, and was treated without benefit. In

July, 1915, he again returned, and this time was treated with the solution. After two weeks' treatment the ear was dry. At this writing, the patient's ear still is free from secretion.

D. L., age 12 years, had a suppurating ear since he was one month old. July, 1914, he had a radical mastoid operation. The ear continued to suppurate. Vaccines and local treatment were of no avail. He left for home, but returned in July, 1915, for further treatment. July 20, 1915, I began treatment with the solution, and after three applications signs of improvement showed. At this writing the ear is practically free from secretion.

Mr. R. A. J., age 26 years, had chronic suppurative otitis media for the past three years. The discharge ceased after the second treatment, and the ear remains dry now one month after that.

A. W., age 4 years. The mother said that something burst in the ear on Saturday night, and they came for treatment on Monday morning, the ear discharging. The solution was used, and the cure was complete after the second application.

N. C., age 2 years. July 12, 1915, had double tympanotomy. July 13, 1915, there was mastoid tenderness. The usual treatments gave no relief. July 17, 1915, all other treatment was discontinued and the solution was used for the first time. July 20, 1915, the ear was free from secretion.

N. S., age 12 years, had a discharging ear of three weeks' duration. Had no pain at any time. July 28, 1915, the solution was applied. The discharge ceased after the second application, and has not returned.

My method of treatment is as follows: The ear should be gently and thoroughly mopped out, then, after all evidence of secretion has been removed, introduce a tampon, saturated with the solution, as far down in the fundus as possible, using very little force. If the secretion is profuse, this procedure should be repeated daily. As the discharge lessens, the treatment should be given on alternate days or longer periods, at the discretion of the doctor.

A few pertinent observations may not be out of place. The surgeon must exercise great care in removing any exciting cause located in the nose or nasopharynx; the presence of necrotic bone must be determined and special directions given as to the general health of the patient.

In acute conditions, where mastoid involvement is suspected, I would advise repeated instillations, rather than tampons, during this stage.

What has appealed to me most strongly is, the results obtained in those cases where the radical operation upon the mastoid bone has been performed in suppurative otitis.

JOHN S. DUNN.
New Orleans, La.

CLINICAL NOTES FROM IDAHO. TY-PHOID FEVER AND THE CONTAGIOUS DISEASES

These are jottings of clinical experience in the early fall and winter in the beautiful climate of Idaho, at an altitude of over a mile. This season has been extremely dry, no rain falling for three months, and the dust has been very objectionable. Whether the dusty summer will predispose to greater prevalence of throat and lung diseases is pure conjecture at this time, for the weather, while frosty at night, is warm and bright during the day. There have been few cases of "summer complaint," although the flies have been bad, and no cases of typhoid fever.

Last fall, there was a good deal of wet and stormy weather and an increase of rheumatic and bronchial troubles. And only one case of typhoid-fever. This was in a girl of fourteen who had been too ill to go to school, but was up and around for ten days before receiving medical attention. Two days later, the hemorrhage occurred. Ice and absolute rest for twenty-four hours, with a hypodermic of emetine hydrochloride, 1-2 grain, repeated in twelve hours, was all that was necessary to control this. The patient was free of fever in twelve days, but convalesced rather slowly. Intestinal antiseptics (the sulphocarbolates) were, of course, given throughout the attack in 5- to 10-grain doses every two hours, to reduce fetor of the stools and control tympany.

There have been few other cases of communicable diseases, and these were so mild as to need little treatment. Measles, pertussis, and smallpox rarely receive medical treatment. During the winter, there was little pneumonia, but the wet months of April and May brought more than their share. The sthenic cases are treated with the defervescent granule, given frequently until defervescence, with thorough elimination, is secured. In the early stages of the disease no food is allowed, but water is ordered in quantity. Calomel is given in divided doses followed by saline laxative, and, in a few hours, by a large dose (three or four tablespoonfuls) of castor-oil. I have seen cases that were showing very grave symptoms—temperature 104, pulse, 120, severe

pain in the right chest, with constant hacking cough, rusty sputum, restlessness—so improved by thorough elimination as to make one question the diagnosis.

Then there are cases that do not improve even with the most thorough elimination, demanding constant energetic attention to bring them through the crisis.

I believe in fresh air, but there is no necessity for freezing the patient. I believe in rest, but not to the detriment of the patient. Do not disturb so frequently as to interfere with rest, especially at night. Toxemia kills—eliminate even in the seemingly moribund. Do not overstimulate—but stimulate without fear when stimulation is demanded. If digestion is poor, if tympany develops, if fetor of the stool is present, restrict diet, eliminate, give intestinal antiseptics freely.

Since the great development of the field of action of emetine, and its specific influence in amebic disorders, this alkaloid has become the best-known of all our plant-remedies, and its use is being advocated in disorders that at first sight seem hardly related. Deep consideration of the fact of focal infections, arising anywhere in the body, and their often puzzling obscurity, has drawn attention to their possible cause in mouth and throat diseases; and in these cases it has been found that injections of emetine hydrochloride are beneficial and, in time, curative.

One inevitably, nowadays, in discussing pyorrhea alveolaris, thinks of emetine and its wonderful specific action in controlling this disease. I have seen this specificity in several bad cases of late, and it is really remarkable what excellent results are obtained. In cases of pyorrhea, it is absolutely necessary to have the earnest cooperation of a good dentist, and he must eradicate the local disease first, before any treatment will be successful.

I have used emetine in hemorrhages and find it almost specific here. In metrorrhagia, menorrhagia, pulmonary hemorrhage, intestinal hemorrhage, epistaxis, it has been of evident benefit.

I am using it in a case of psoriasis in a boy of twelve, affecting the arms and legs, and some improvement is already noticed. In a case of gall-bladder trouble, doubtless due to mouth infection, and in another owing to chronic tonsillitis, a few hypodermic injections of emetine, in conjunction with local treatment, have, seemingly, put an end to the attacks.

I cannot get away from the necessity of reiterating the importance of elimination. It

seems strange that all the literature on this subject has produced so little real impression upon the rank and file, and we still, and all too often, meet with cases where this essential in all treatment has been woefully neglected. To give a few tablets of calomel, followed by a saline laxative, is routine treatment with a great many, and these think that elimination has been attained. Their other treatment is all right, but results are not as expected, and remedies are blamed, when the blame should be placed upon the *lack of thorough elimination*. Here one often sees remarkable results follow a large dose of, say, castor-oil.

I am partial to castor-oil. I think it is the remedy in many diseases of childhood, and in those of adults also. It is an old remedy, some three thousands of years old, and, so, if age counts, it ought to be beneficial. Its cleansing effect is wonderful.

All this, because of a case lately treated. Elimination was demanded, in view of the foul breath and the coated tongue, the fetor of the stools, the inappetence and poor digestion, and, yet, all kinds of remedies had been given to alleviate the distress of the patient, without attending to the prominent symptoms present, and all these calling for—yes, 4 tablespoonfuls of castor-oil or else a sufficient quantity of a saline laxative.

After elimination, the purified cells of the body will be able to select the right remedy, to correct the deviation from health.

In this connection, I would call attention to the beautiful results obtained from the use of bilein compounds, such as calomel, podophyllin, and bilein compound preliminary to the routine use of your chosen laxative.

Two brothers and their sister have died from "leakage of the heart." The last member of the family, a man of forty-four, has developed endocarditis, with involvement of the mitral valves. Rest and elimination, with macrotys and cactus, and attention to the digestion, constitute the treatment.

I have under treatment for typhoid-fever, a little patient, a sister of my one case last fall. Following a suggestion in *Clinical Medicine*, I am trying emetine hypodermically, and shall report results.

R. J. SMITH,

Bancroft, Idaho.

FREEMAN'S PELLAGRA CASE: A CORRECTION

I have a correction to make concerning the case of pellagra reported by me last month. At that time, I stated that I had not seen

the patient for three weeks, but that the neighbors told me the child was doing well, that its skin was clearing up, and everything was improving.

Some two weeks later, the mother again brought the child (3 years old) to me, giving as an excuse for the long absence that she had been away from home. The child's condition was worse again. The lower part of its face was quite clear, but the upper face—especially the forehead and back of the ears—the arms, hands, knees, and feet were much worse; and the child was more stupid, as if its brain were affected. I now gave echinacea, calcium sulphide, galactenzyne, nuclein, and other tonics, as seemed needed, but there was no real improvement. The people are very poor and negligent, the medicines (as I discovered) were not given half the time, suitable food could not be obtained, and November 20 the child died. Neighbors say the child was born out of wedlock, which, perhaps, accounts for the neglect.

However, the statement concerning the improvement after the new treatment with iodine and resorcin, as I reported, is testified to by those who saw the sick child at that time.

C. A. FREEMAN.

Geary, Okla.

THE SHORTAGE OF DRUGS

We have received from Dr. L. F. Schmauss, of Alexandria, Indiana, a copy of some resolutions, concerning the present shortage in various drugs, adopted at the annual meeting of the Indiana Eighth District Medical Society, held in Muncie, Indiana, October 21, 1915. Dr. Fred McK. Ruby is president of the Society and Dr. H. D. Fair is the secretary. It is just as Doctor Schmauss states in this letter, relative to this drug shortage:

"Since there is no excuse, no justification for the prevailing interference with our legitimate trade or commerce, with the importation of drugs and chemicals, prompt action should be urged upon and taken by every medical society or association of the United States. This is not a matter of partisanship nor a matter of pro-Ally or pro-German, but a matter of pure business and of exerting our rights and of performing our duty as the party or profession directly concerned."

The resolutions are as follows:

"Whereas, owing to the present condition, there is an inability to import drugs and chemicals necessary in the treatment of the sick and injured, by reason of which the

price has so advanced that in many instances it becomes prohibitive and in others absolutely impossible to obtain them, and

"Whereas, this condition imposes a great hardship upon physicians and patients and in many instances endangers the life and health of the people,

"Therefore, we exceedingly deplore this condition and pray that you will use your best efforts speedily to relieve the same.

The Committee: DR. L. F. SCHMAUSS, DR. I. N. TRENT, DR. G. REYNARD."

SORE-THROAT SUGGESTIONS

All sore throats are caused by micro-organisms except those due to trauma, and these at once become infected by the same parasites.

Any form of sore throat opens the door to the invasion of diphtheria; and no man may tell when these germs are not present, in carrier or house.

Make it a rule that every sore throat must be treated from the standpoint of preventing the supervention of diphtheria.

Fortunately an effective preventive of diphtheria is also a quick, sure and harmless cure for any sore throat. Here it is: Potassium chlorate pulv., grs. 30; acid hydrochloric, strong, dram 1. Mix in a 4-ounce vial and add at once water to fill; cork tightly. Dose, a teaspoonful, undiluted, every one to four hours. Give water just before each dose. As long as the green color shows free chlorine it is active; when this fades, throw away and renew.

In cases needing astringency and in early diphtheria add two drams tr. ferri chloridi to the 4-ounce mixture just described. Same dose, same method of dosing. While this is a disagreeable dose, it so quickly relieves the burning that a little child will beg for more doses.

The angina of scarlatina responds promptly to applications of salicylic acid solution, until true diphtheria complicates; when it is useless.

All forms are bettered by relieving from fecal toxemia, which renders the best local treatment nugatory in chronic forms.

Begin by clearing the bowels and draining the water off; calomel and podophyllotoxin for six doses; then a saline laxative; and meanwhile your local applications.

Our fathers believed (a) that calome' acted on the liver; (b) that it did the patient good. In the vast majority of cases the latter belief was correct. You may argue the first.

Aconitine dissipates an acute pharyngitis by opening the blood vessels and letting the blood flow out and decongest the affected tract.

Atropine dissipates an acute catarrh by dilating the capillaries generally and pulling the blood out of the engorged area.

Pilocarpine dissipates an acute mucous engorgement by draining the blood of water so that the congesting fluids run out into the vessels.

All stimulants of excretions act like pilocarpine, but few if any so thoroughly and so quickly; still, hydragogs are effective.

Potassium bichromate in very small, frequent doses has a singular soothing effect on an inflamed throat; let the granule dissolve on the tongue.

Calcidin in small doses every fifteen minutes, in a spoonful of very hot water, usually dissipates an acute sore throat if taken early enough.

A cold wet compress to the neck is believed by many to be quite effective and may be applied to any acute form of sore throat; ice in diphtheria.

The slightest sign of coryza in diphtheria is ominous; begin syringing the nostrils with silver nitrate at once; changing to chromic acid if epistaxis occurs.

In chronic forms, with red thickenings of mucosa, paint daily with iodine, keep bowels clear, and give potassium bichromate or calcidin regularly.

Many remedies abort a forming tonsillitis if given early enough.—salicylates, quinsy balls, guaiac, chlorine, quinine, pilocarpine, purges.

Calx sulphurata (calcium sulphide) is probably the most effective of all—give a centigram every fifteen minutes till the skin smells like—? ? ?

Nuclein solution 's a curious remedy here; amazingly effective if taken early and in full doses of full strength.

The irritative cough is relieved by allowing granules of codeine, 1-6 grain each, to dissolve on the tongue, meanwhile restraining cough by will.

In influenzal forms forget your dosage and give enough calcidin to do the work; it will do it; give 5 to 10 or 20 grains often.

Just to be up to date, I suggest that in all sore throats you amputate the affected parts as quickly as possible.

Chronic forms require chronic treatment; and here is where helenin, the tonic action of berberine, and especially persistent care of the bowels give good results to him who has knowledge and patience.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

[Continued from December issue, page 1165.]

DOCTOR CABOT'S address, "A Profession or a Trade?" delivered at the last meeting of the Mississippi Valley Medical Association, to which I referred last month, was as follows:

Medicine has always been regarded as one of the learned professions, and, indeed, this is a distinction of which we are particularly proud. But the tendency of a profession to degenerate into a trade is ever present and is a danger from which more than one learned profession has been unable to escape. If medicine is to avoid the downfall which has overtaken the law, it will be because we are more conscious of the dangers or more alert to check at the beginning undesirable developments. It is for this reason that I make no apology for calling to your attention some tendencies in the development of modern medicine which seem to me fraught with danger.

At the outset of any discussion of the professional or trade aspects of medicine, we shall do well to define our terms.

To me, a profession is an occupation requiring an education in science and which is pursued for its own sake. It must have the advancement of science or the benefit of mankind as its chief end, pecuniary advantage being always a secondary and subordinate consideration.

A trade, on the other hand, is an occupation which is pursued chiefly, though not wholly, for the purpose of acquiring wealth; this wealth, with its ability to advance the interests of the individual, being the chief end.

In estimating the importance of any development in medicine, we can best do so by comparing present conditions with those of the past. The changes which have taken place and the effect which they have produced upon the prevailing type of practitioner stand out clearly, if we look back and picture to ourselves the type which was

looked upon as the highest twenty years ago and compare it with the best that we are producing today.

The "big men" of twenty years ago had, without exception, gone through the school of general practice and had risen from the ranks to eminence by sheer force of character; being largely without assistance of the laboratory, and having fewer instruments of precision than we possess. They had trained their faculties of observation in the hard school of experience and had come to rely far more than we do today upon their individual judgment, unsupported by clearly demonstrable fact. They were more astute judges of men, with a larger comprehension of the strength and weakness of human nature, and a wide sympathy. They were characterized by a certain boldness less seen today, and bred of the necessity of staking their reputations upon much less certain evidence. They seem to have been broader-minded and rather more in touch with affairs other than those of medicine. Their devotion to the ideals of medicine I believe to have been more profound. Upon this latter point we have the direct testimony of a great surgeon in a lecture delivered nineteen years ago this month. Among other things he said:

"Medicine is the noblest of professions and the saddest of trades. As a trade, it certainly is a very sad calling. . . . In all other ordinary business trades, the young man who is entering upon them advertises himself in some way; the doctor may not advertise. . . . He can not sue others very well for his debts . . . because that savors of oppression. It is the taking advantage of other people's misfortune; it is taking advantage of their sickness and their weakness. . . . The doctor, you must bear in mind, has to carry the burdens of all sick people; he is their friend, adviser and counselor, and if you look at it from a plain business point of view the fact must remain that this must be counted as a somewhat discouraging feature. . . . Ours is the noblest profession

that exists. It is above all the most humane; it can not be otherwise; we seek daily and give our lives to make people happier, to make them better, to alleviate their suffering in every possible way."—(Cheever, *Boston Medical and Surgical Journal*, December 17 and 24, 1896.)

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This fairly expresses the ideals of the best type of practitioner developed under the conditions which existed a generation ago, conditions which developed character, which involved the ability to judge men, to make sound deductions from a study of character and to come to a decision and act upon it as the result of weighing probabilities, not facts.

Since that time, enormous advance has been made in every field of science as related to medicine. What we may broadly call "the laboratory," covering the fields of chemistry, bacteriology, pathology, and physics, has broadened the scope and increased the accuracy of medical diagnosis. Instead of being required to weigh probabilities, we are today able to assort facts. Judgments of character have given place to assortments of data, and, whereas the practitioner of a generation ago was profoundly influenced in his decisions by his study of the individual, the consultant of today may almost arrive at his opinion without ever seeing the patient. The amount of technical knowledge required of the physician today is enormously greater than was required of his predecessor, and it can not successfully be denied that he is far more likely to arrive at a just appreciation of the facts.

With this advance, however, has gone the necessary division of medicine into specialties, a division which the rapid accumulation of knowledge has rendered inevitable; and this has sounded the death-knell of the general practitioner. His place has been taken, or, rather, is occupied, by the medical group, an aggregation or conglomeration of specialists who, having pooled the results of their investigations, are able with greater accuracy to come to a diagnosis. These groups have developed either around the hospital as a center or around some individual who, finding that medicine was growing away from him, has surrounded himself with assistants and associates equipped with special knowledge.

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In its most finished form, the medical group is represented by a hospital, with medical and surgical chiefs, chiefs of special departments, and under each the necessary subordinates;

but this development has been reached only by a comparatively small number. In a less obvious form, however, the principle is very widespread. Almost every internist or surgeon of large practice is, in fact, the head of a group, only it is unorganized and unnecessarily expensive. Each has an aurist, an oculist, an orthopedist, a dentist, a roentgenologist, a chemist, a pathologist, a serologist, who examine his patients and on whose collective opinions his own diagnosis, prognosis, and treatment must rest. Each one of us is a part of some more or less informal group, though the cohesion may be so loose as to more or less obscure the fact. This tendency to grouping is becoming more marked and the groups more formal.

There can be no question as to the efficiency of this method of "group medicine" in arriving at an accurate diagnosis, and there can, I think, be no question of the necessity of such grouping in the successful development of scientific medicine. We may, and do, regret the disappearance of the well-rounded general practitioner, but we must acknowledge the limitations of the human mind and, so, bid him an affectionate farewell. We shall, however, do well to remember that this development carries with it certain serious disadvantages, the effect of which upon the type of practitioner developed may well be profound.

"Group medicine" means diminished personal relation with the patient, less comprehension of character and personality, increasing probability of impersonality in the relation; in a word, the group tends to become a machine. Should this occur, the individual becomes a cog. Furthermore, the development of group medicine, with the increasing subdivision of medicine, has enormously increased its expensiveness. Such groups require vastly more income than did the general practitioner whose place they have taken. It is this increase in the expense of medical practice which has fostered the growth of scandalous advertising, fee-splitting and the general exploitation of patients for money.

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These are but the evidences of the development of the trade-aspect of medicine, since all of them not only are proper, but necessary in the conduct of any well-organized business. Business ethics require the giving of commissions to those who send trade. Business development requires advertising; business judgment requires that discovery be developed for the benefit of the discoverer.

The increasing impersonality of group medicine makes the acquisition of the business point of view more easy. With the loss of the personal relation, the impropriety of taking advantage of the misfortunes of others slips into the background, while the necessity for maintained income from which to pay salaries becomes increasingly evident. A group must almost of necessity be managed upon a business basis. Salaries, if agreed upon, must be paid, and, whereas the practitioner of former times had to think only of himself and of his family, the responsible head of a group must think of all the subordinate members of that group.

If it be a fact that most medical groups which have reached prominence in this country have been built up by advertising and fee-splitting, it is not so much a wonder that this has occurred as that it has not been absolutely universal. In the transition between individual medicine and group medicine, this problem of income has pressed for solution and has been solved most easily by the adoption of business methods which require advertising and commissions.

We shall do well to look these facts squarely in the face and to decide as promptly as may be whether this development of group medicine is the logical method and, if such be the case, to lend it, not only our support, but our criticism. It must be perfectly evident that the individual who undertakes to combine in his own person all the functions of the members of such a group will inevitably fail, and that the replacement of the general practitioner is already complete for such portions of the country as are thickly populated. We shall do well also to recognize that this development seriously threatens the professional character of medicine and that, unless it be carefully safeguarded, the professional character will be lost.

For my own part, I am entirely convinced that the group must take the place of the individual.

We shall doubtless be tempted to ask whether such a system of medicine tends to develop men of a caliber equal to their forefathers; and whether this business organization tends to develop as high a type of practitioner. The answer to these questions is, of course, difficult, for, certainly, it will tend to develop an entirely different type.

More and more the heads of these groups will become experts like any other business experts and likely to hold a similar position in the community. The "big men" in med-

icine will be more like the big men in business. They will cease to be the guide, counselor and friend of the individual, but may perhaps become the guide, counselor, and friend of the community. Their present position in the community will probably be lost, but they may acquire another, perhaps better suited to modern conditions. Since the development of medicine has made it impossible for them to do justice to their patients without much assistance from others, they must be content with the altered relation; but this change does not require the abandonment of the ideals of a profession and the assumption of the character of a trade. It is wise, however, to appreciate that the scale is narrowly balanced and may readily tip in such a way as to spill its contents from a profession into a trade. If this is to be avoided it must be by a willingness to face the facts and deal with them.

The chief difficulty lies in providing a proper income for the support of these medical groups. At the moment it is being provided by a competition that has many dangerous possibilities. Competition is the essence of growth, but competition may be of more than one kind. Competition in a trade is, grossly speaking, for a money reward; competition in a profession is for scientific achievement. If competition in medicine is to be both for money and scientific achievement, then money may well gain the upper hand. Competition between medical men for money when lives are in the balance is intolerable, and, yet, no one of us can honestly deny that such competition today exists and that it is at the root of most of the worst tendencies against which we have to strive. If medicine is to remain a profession, this competition for money must cease.

Now, if we are to remove from the field of medicine this undesirable kind of competition, then all practitioners of medicine must be paid salaries and the amounts of these salaries must be determined by persons having no personal interest at stake. This means, reduced to its simplest terms, that we have a choice between the taking over of medical practice by the state or the management of medical practice from institutions or hospitals as a center. In either case, salaries must be paid to all, and the temptation to practice medicine for money must be eliminated as a possibility. The choice between state-medicine and hospital-medicine must be determined ultimately by the peculiarities of the civilization concerned.

(To be continued.)

Among the Books

TREAT'S "INTERNATIONAL MEDICAL ANNUAL"

The International Medical Annual. A Year-Book of Treatment and Practitioner's Index. Thirty-third Year. New York: E. B. Treat & Co. 1915. Price \$4.00.

If Messrs. Treat and Company existed for no other purpose than to furnish us each year with this excellent summary of the twelve months' achievement and progress in medical science, they would fulfill a function which would amply justify their corporate existence. Of course, it does not tell the whole story of research and experiment—no volume could do that. But it serves out the net practical sublimation of the year's work, cast into ammunition (to use the figure of speech of the day) ready for use by the man at the front.

We are glad to see a larger and larger sprinkling of American sources throughout the book—a feature, by the way, which is not indicated by the list of "contributors" on the title page, who are mostly English. One finds, however, that much of their contributions is derived from American authors and workers. The more modern forms of therapy also find a very generous representation in this volume.

AARON: "DIGESTIVE DISEASES"

Diseases of the Digestive Organs. With Special Reference to Their Diagnosis and Treatment. By Charles D. Aaron, Sc. D., M. D. With 154 engravings, 48 roentgenograms, and 8 colored plates. Philadelphia and London: Lea and Febiger. 1915. Price \$6.00.

The plan of this work follows the physiologic path of the digestive tract, beginning with diseases of the mouth, and taking up, in succession, the pharynx, esophagus, stomach, liver, gall-bladder, bile ducts, pancreas, small intestine, appendix, cecum, colon, sigmoid flexure, rectum, and anus.

The author has attempted to put before the reader, in an orderly, consecutive manner, the diagnosis and treatment of digestive diseases and to make available to him all the modern resources of this branch of medicine.

There is an unfortunate tendency nowadays to isolate the consideration of diseases of the digestive organs from the great body of internal medicine, in spite of the fact that a direct connection exists between the functions of the digestive tract and those of other organs.

In this work the author reaffirms the intimate relationships between gastroenterology and all branches of internal medicine. No subject has profited more by modern research than has the diagnosis and treatment of diseases of the digestive organs; and all of this progress and advance finds a representation in the pages of Doctor Aaron's excellent work.

WOODRUFF: "MEDICAL ETHNOLOGY"

Medical Ethnology. By Charles E. Woodruff, A. M., M. D. New York: the Rebman Company, 1915. Price \$2.00.

The author states that the present work was begun as a revision of the first edition of "The Effects of Tropical Light on White Men," but that he found it necessary to change the title to "Medical Ethnology" because he found himself obliged to reckon with so many other factors besides pigmentation which have entered into the discussion of the reasons for the differences between the present races and sub-races of men—for example, the damage to migrants by adverse environmental conditions against which they have no physical defenses.

Woodruff accepts as an axiom the proposition that all the laws which govern the evolution of adaptation of lower animals to environment by elimination of the unfit and selection of the fittest, apply with equal force to men, which, he thinks, fully explains the high death rate of migrants and their eventual extinction or change of type. He appears to us, however, to fall into the common error of assuming that the acceptance of this axiom involves a blind enslavement to it.

While it is doubtless true that all the laws which apply to animals in this respect apply also to men, it may be, and probably is, equally true that there are other laws which apply to men which do not apply to ani-

mals. It seems to us that the author does not give enough consideration to these other laws and factors. Except for this defect, which characterizes many works on ethnology, Doctor Woodruff's book is a masterly presentation of the subject.

MEDICAL RECORD VISITING LIST

The Medical Record Visiting List, or Physician's Diary, for 1916. Newly revised. New York: William Wood & Co., 1915. Price, \$1.25.

We take pleasure in announcing the appearance of the edition for 1916 of this visiting list, which has become a standard of its kind. It contains much valuable information to which the physician may want to refer in a hurry, such as dosage, incompatibles, weights and measures, treatment of poisoning and other emergencies. The book is bound substantially in black leatherette, with flaps, pockets, pencil, and other conveniences. Our readers who have been in the habit of using this visiting list will do well to act upon this reminder and supply themselves with the copy for the coming year.

STEWART: "SURGERY"

A Manual of Surgery, for Students and Physicians. By Francis T. Stewart, M. D. Fourth Edition. With 580 illustrations. Philadelphia: P. Blakiston's Son & Company. 1915. Price \$4.00.

This book is especially designed for the needs of the student, whose crowded hours demand a manual stripped of verbiage and unessentials, and for the general practitioner, who seeks a guide to everyday surgery. Everything, therefore, has been set down concisely and completely, and such suggestions have been made as to diagnosis and treatment as will best aid the physician in his daily practice. In short, the main object of the book is brevity and practicality. For these reasons, historical matter and bibliographical references have been omitted, and emphasis is laid upon those details which the author's experience has taught him to be of the greatest clinical importance.

In the present edition, the sections dealing with instrumental investigation, such as bronchoscopy, proctoscopy, radiography, and so on, have been expanded. Important changes have been made in the articles on transfusion, hemorrhage, spinal puncture, colectomy, hernia, tumors of the hypophysis, and surgery of the lung, liver, spleen, stomach and breast.

New sections have been added on the exclusion of the pylorus, esophagectomy, sporotrichosis, surgery of the hand, and transplantation of fat, fascia, bone and veins.

MIND AND HEALTH SERIES

Human Motives. By James Jackson Putnam, M. D. Boston: Little, Brown & Co. 1915. Price \$1.00.

The Meaning of Dreams. By Isador H. Coriat, M. D. Boston: Little Brown & Co. Price \$1.00.

Sleep and Sleeplessness. By H. Addington Bruce, A. M. Boston: Little, Brown & Co. 1915. Price \$1.00.

These three volumes constitute a part of an important and novel series of handbooks, to be written by eminent specialists and edited by H. Addington Bruce, and to be known as the Mind and Health Series. It is well recognized that in recent years there has been developed an entirely new department of the healing art, the outgrowth of the discovery of the intimate and subtle inter-relations between mental and bodily states in the causation and cure of disease. It is the aim of this series of books to present the facts pertaining to this new department, and the theories to which they give rise, in a form sufficiently non-technical and at the same time sufficiently detailed to insure their general understanding.

Doctor Putnam's book is a study of the psychology and philosophy of human conduct, based largely on the author's use of the Freudian psycho-analytic method of mental diagnosis. Besides being of great value for medical purposes, this method, as the author shows, has thrown a flood of light upon human behavior in general.

In the second volume Doctor Coriat discusses the psychology and psychopathy of dreams, with particular reference to their value in the treatment of nervous disorders, reinforcing his discussion with many concrete instances from his clinical experience as a neurologist and psycho-pathologist.

The third volume is from the pen of H. Addington Bruce himself. The author presents the contrasting theories of sleep, with emphasis upon some recent experimental studies which are of great practical, as well as theoretical, importance. The state of the mind in sleep is carefully examined from every standpoint. Finally, the ever-urgent problem of insomnia is taken up, its manifold causes reviewed, and the most approved modern methods of treating it plainly stated.

Five more volumes of this interesting and instructive series are now in course of preparation.

CHICAGO CLINICS

The Medical Clinics of Chicago. July, 1915. Volume I, No. 1. Published Bimonthly by W. B. Saunders Company, Philadelphia and London. \$8.00 per year.

This is the first of a series, undertaken by W. B. Saunders Company, of periodical reports of medical clinics by the various distinguished clinicians of Chicago, similar in character and aim to the reports which the same publishers have been issuing for the last year or two of Doctor Murphy's surgical clinics. They hope in this way to present to the profession in each number a series of cases representing all branches of internal medicine which shall be word-photographs of the actual, up-to-date management of each case in its important phases.

The first number speaks for itself. It contains a most representative collection of case reports, including at least one, and in most instances more than one, from the clinics of Doctors Mix, Spencer Williamson, Abt, Preble, Goodkind, Tice, Hamburger and Hamill, respectively. In the second number, in addition to the above clinicians, Dr. William Allen Pusey is represented, with a contribution on x-ray and epithelioma. In their announcement, the publishers state that the publication of this series has been undertaken in response to a demand by the physicians of the country. Whether this be true or not, it is certain that the series will fill a real place in the needs of physicians.

SCUDDER: "FRACTURES"

The Treatment of Fractures. With Notes Upon a Few Common Dislocations. By Charles Locke Scudder, M. D. Eighth edition, revised, with 1057 illustrations. Philadelphia and London: W. B. Saunders Company. 1915. Price \$6.00.

Whenever one thinks of fractures, one thinks irresistibly of Scudder and his book, in the same way, and with the same attitude of mind, that one thinks of Stevens in connection with the steam engine. So classical, indeed, has this work become, that the reviewer finds it difficult to say anything of pertinence concerning it which has not already been said. It is some years since the last edition appeared. During that period the author has evidently kept well in touch with modifica-

tions of treatment, and such as have stood the test of experience he has incorporated in this new edition. He does not believe—and we agree with him heartily—that a permanent work should contain suggestions which have not been thoroughly tried out and found to be of permanent practical value.

In the author's judgment, the greatest recent advance in the treatment of fractures of bone is the application of the principle of autogenous bone-grafts in cases of delayed union and of non-union. This feature, therefore, finds considerable representation in this new edition of his book. Many new illustrations have been added. New material has been added upon fractures of the jaw, the acetabulum, and the greater tuberosity of the humerus, and upon separation of the lower epiphysis of the femur.

MALLORY AND WRIGHT: "PATHOLOGICAL TECHNIQUE"

Pathological Technique. A Practical Manual for Workers in Pathological Histology and Bacteriology. By Frank Burr Mallory, A. M., M. D., and James Homer Wright, A. M., M. D., S. D. Sixth edition, revised and enlarged. Philadelphia and London: W. B. Saunders Company. 1915. Price \$3.00.

As the authors pertinently remark, in their preface, every autopsy presents for solution a problem which may be simple or complex. The known quantities are certain clinical symptoms and physical signs; the unknown quantities are the gross and microscopic lesions which may or may not have given rise to clinical symptoms or signs, the etiology of these lesions, and the order of their sequence. The solution of the problem often requires the highest skill in bacteriological and histological technic, but therein lies the fascination of pathological work.

It is to the systematic outworking of such problems that this book addresses itself, or, rather, instructs the attending pathologist how to address himself. The methods employed are presented in consecutive form, so as to avoid unnecessary repetition. The present edition contains a number of additions, partly of standard methods which have not been incorporated earlier because they seemed of less value to the pathologist than to the histologist, and partly of new methods which have appeared since the former edition was published. The book will undoubtedly meet the needs of the practitioner who has to do more or less pathological work.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6156.—“Potassium Permanganate and Amenorrhea.” B., Kansas, wishes to know whether potassium permanganate will cause a woman to menstruate. He is treating a young healthy girl of seventeen, who first menstruated when fifteen years old, but for the last six months has not done so. She is the picture of health, but has heard that if she does not menstruate she will “go into consumption.” Therefore she is insistent that something shall be done at once.

Potassium permanganate has been recommended for simple idiopathic amenorrhea. It is, undoubtedly, of some service if taken for two weeks before the date of expected menstruation. Of late, dioxide of manganese has to a great extent supplanted potassium permanganate, the dose of the former being 1 to 3 grains.

Potassium permanganate is easily decomposed; moreover, brought into contact with organic matter, it may cause an explosion. It is employed as an antiseptic and oxidizing agent, the peculiar property of the remedy being its readiness to part with oxygen.

In concentrated solutions, or in substance, it is a mild escharotic. Weak solutions (1 : 2000) are employed in purulent ophthalmia. In the strength of from 1 to 5 grains to the ounce, it constitutes a useful application for foul ulcers, cancer of the uterus, vagina, and so on. Solutions of varying strengths are also employed in the treatment of gonorrhea, leucorrhea, sore throat, ozena, and the like. It is also injected subcutaneously in the region of snake bites.

We should hesitate to give the drug, save in very small doses, for more than a few days, say, 1-64 grain every three or four hours, four to six days before the expected period.

Bear in mind that the drug can only prove useful in typical anemic amenorrhea. During the intramenstrual period, iron arsenate or, better still, the triple arsenates with nuclein should be administered.

Impress upon your patient the fact that failure to menstruate cannot possibly produce or cause consumption. Reversely, though, consumptive females may cease to menstruate or never begin to menstruate at all. Considering that your patient is the “picture of health,” there is no reason whatever for her fear of an oncoming phthisis. Make a careful examination of the pelvic organs.

Do not forget the possibility of retention of the monthly discharge. Is there any pain or distress of any kind at the monthly period? How often did the menses appear?

If the vaginal or cervical canals are not occluded and there is no flexion—ante or retro—of the uterus, with retention of menstrual fluid, it is more than likely that a course of the triple arsenates, or iron and manganese with caulophylloid, gr. 1-6, and viburnoid, gr. 1-6, three times daily for a week or ten days prior to the period on which the menses should appear, will prove effective. Occasionally this writer gives quinine sulphate, gr. 1, every four hours during the last twenty-four. On retiring at night, the patient should take a hot foot-bath, keeping her feet and legs in a full pail of hot water for at least fifteen minutes. The limbs and the pail should be covered with a thick blanket and heat be maintained by the addition from time to time of fresh hot water.

QUERY 6157.—“Intestinal Kink Causing Coprostasis.” A. F., Michigan, presents for consideration the case of a patient, a farmer 63 years of age, whose former weight was 185 pounds, but now is only 125 pounds. For the past three years, this man has been in the hands of all kinds of doctors, besides regular quacks, osteopaths, magnetic healers, and so on, but has steadily been slipping downward, until now he is confined to his room and bed most of the time. He has just come under our correspondent's care, and the latter is anxious for our assistance.

For years this man had spells of severe pain in the stomach and bowels, and then from one to three morphine hypodermics have been necessary to give relief; recovery, however, was always perfect and no appreciable harm was done. Three years ago he began to have severe constipation, with "bleeding piles." He began to go down fast and commenced changing doctors, more particularly patronizing quacks of various kinds. His hemorrhoids do not bleed any now, but the colon will fill up for two or three weeks, then begins to empty, and enormous quantities of feces will be voided during two or three days. When the colon is finally empty, he will begin to pass frequently (every one or two hours, day and night) mucus of a most offensive nature. He suffers from pain and soreness all over the bowels, but this wears off as the bowel begins to empty, with the exception of a place in lower left flank. He is nervous and does not sleep, and is now taking some three or four codeine tablets (1-4 grain each) during the twenty-four hours.

This fecal impaction has been going on for three years. Appetite is good. Has had cystitis, but has that in control. When the colon gets packed, he can only just drag his legs around, and he suffers pain in hips, knees, and ankles (has been treated a good deal for rheumatism), but as soon as the colon is empty the pains all cease in the legs and he can use them properly. This the history.

We should be inclined to advise exploratory incision. Either an intestinal kink or an intraabdominal growth obstructing the lumen of the gut exists. However, before resorting to the knife, you might try high colonic flushing, commencing with half a pint of kerosene (patient in knee-chest position). The kerosene should be thrown into the transverse colon, through a rectal tube, followed fifteen or twenty minutes later by hot soapsuds. Be sure that this oil enema is completely emptied out again.

It is just possible, of course, that a tunneled enterolith exists (most frequently these are found in the region of the hepatic flexure), the more fluid feces passing through and remaining in the bowel, because of its atonic condition, until by some means or another it is evacuated. The cause of the whole trouble, however, remains behind and exactly the same conditions will recur. Kerosene will break up such a fecal mass in the majority of cases.

When the bowel is emptied, administer highly nutritious foods containing little waste, and every three hours give physo-

stigmine, berberine, and juglandoid in full dosage. This combination is a most efficacious peristaltic stimulant and intestinal tonic, indicated in colonic torpor and general intestinal insufficiency.

Morning and night give 1 or 2 ounces of refined liquid petrolatum (socalled Russian mineral oil) or, better still, the same quantity of petrochondrin, a combination of an acid-free and alkali-free petrolatum and emulsion of *chondrus crispus* (Iceland moss).

Massage the abdomen every day, following the course of the colon, or, better still, apply the faradic or sinusoidal current.

If these steps do not prove curative, operation is distinctly indicated, provided, of course, the general physical condition warrants such procedure.

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QUERY 6158.—"Hypernephroma." W. C. B., Nebraska, forwards a section of a tumor of the kidney for examination and states: "This represents a case of 'Christian Science' treatment of a tumor for about five years; and, so far as I can discover, this growth had been in existence for a longer period than that."

You have to deal with a hypernephroma. Such growths, as you are aware, arise from a portion of the suprarenal body which during embryonic life has remained under the capsule of the kidney or even of the medullary substance. The average length of life of such a subject is about fifty years. The evolution of such tumors is gradual, and it is very characteristic of this type of neoplasms that it does not give rise to any symptom before the fiftieth year of life, except for occasional attacks of dragging pains and sensations of pressure.

In the average case, hematuria occurs about five or six years after the first pain is experienced. In 80 percent of all cases, pain is present at some stage and may vary from dull backache to severe renal colic. It is interesting to note that cases have been described in which twenty years have elapsed between the first evidence of pain and discovery of the growth.

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QUERY 6159.—"Syphilitic Sore Throat." A. G. S., Illinois, has "a patient with (twenty-year) syphilitic sore throat; is very hoarse, can hardly talk." He asks: "Shall I give him bacterins, or drugs, or both?"

Tertiary syphilis of the larynx frequently proves extremely rebellious to treatment, though in cases treated reasonably early the prognosis is fairly favorable. Recovery of a

clear voice, however, can never be promised. "In the more advanced cases," Thomson says "the possibilities of rest, care, prolonged treatment, tracheotomy or operations for stenosis should be kept in mind."

We have not a clear enough idea of local and general conditions to enable us to prescribe very intelligently. Furthermore, are we to understand that the patient has suffered from this condition for twenty years or that he is twenty years of age? At all events, the voice should always be rested. Besides, the patient must be placed upon a light—preferably milk—diet. Tobacco and alcoholic beverages are prohibited.

Constitutionally, a mixed treatment should be instituted, though in the absence of urgent symptoms speedy relief can be secured by the use of the iodides. The following may prove advantageous: Mercurous iodide, gr. 1-12; stillingoid, gr. 1-3; strychnine arsenate, gr. 1-64; iron arsenate, gr. 1-32; quinine arsenate, gr. 1-32; nuclein solution, m. 5; this alternated with calx iodata in full doses. Or, give potassium iodide for one week, and calcidin the next, week and week about.

Local treatment sometimes is of secondary importance, while in other cases this must be prompt and energetic. Ulcerating surfaces must be sprayed or wiped with a solution of peroxide of hydrogen and dusted with iodoform, euophen or chinosol. This writer applies euarol with an oil-atomizer, and controls pain and dysphagia by means of insufflations of orthoform. It may be necessary to remove exuberant granulations with the curette or by applying a solution of nitrate of silver (15 grains to the dram), or, else a 25-percent solution of ichthyol. Moderate edema may be relieved by the sucking of ice. In severer forms, tracheotomy may become necessary.

The treatment of syphilis of the trachea is very similar, although more energetic procedure is essential. Mercurial impression should be secured by the inunction or intramuscular injections of gray oil or calomel. Fumes of sublimed calomel may be inhaled. The use of intravenous injections of salvarsan also must be considered.

QUERY 6160.—"Sudden Enlargement of Thyroid Gland." E. M. O., Tennessee, asks advice in the case of an unmarried woman, 28 years of age, heretofore in good health, who consulted him regarding her greatly enlarged neck, which she thought to be goiter. After close questioning, he decided that it was not goiter. He writes: "The young

woman has done lots of papering overhead lately, and I think that is what caused the thyroid gland to enlarge. It looks very much like goiter, but the enlargement occurred within three or four days. Her neck has never before looked enlarged at all, and I have seen her quite often. I put her on echinacea and chromium sulphate, 5 grains every four hours, and am applying iodine over the gland area."

With our very limited conception of regional and general conditions, we are unable to venture a definite opinion. It is hardly likely, however, that the position assumed in papering ceilings would cause enlargement of the thyroid gland. Do not forget, however, that many wallpapers contain arsenic and that absorption of this poison in any quantity, especially through the skin or mucosa, may cause such enlargement.

Remember, also, that in certain individuals the thyroid gland becomes temporarily enlarged without any recognizable cause, or it may do so at the menstrual period or in conditions causing congestion of the pelvic viscera. In very many instances, enlargement of the thyroid gland has been observed during pregnancy, the gland returning to its normal size shortly after delivery. Then, again, the enlargement of the gland is concurrent with the development of the mammae and persists during lactation. Unfortunately, our knowledge of the thyroid gland and its functions is still but very meagre.

We doubt the applicability of echinacea, under the circumstances, and believe you will get better results from irisoid and phytolacoid, in alternation with calcidin. Inunctions of potassium-iodide ointment will prove more effective than the tincture of iodine locally.

If you will submit a report on the examination of this patient's urine and give us more complete clinical data, we may be in a position to serve you more intelligently.

QUERY 6161.—"Parenchymatous Nephritis and Hepatitis." H. H. J., Iowa, requests an outline of treatment for a married woman of 50 years, mother of seven children. Her father and one brother died of "dropsy." Two years ago, she had 20 gallstones removed.

Her present symptoms are: Very marked dyspnea; cough, which brings up frothy sputum mixed with blood, sometimes pure blood. She has no valvular lesion of the heart; her pulse rate is 96 to 100; blood pressure registers 145 (systolic). There is anasarca of the abdomen, legs, arms, and

face. The urine: Amount, in twenty-four hours, 15 to 16 ounces; specific gravity, 1.025; large amount of urates; indican present; albumin, about 3 to 4 percent; hyaline and granular casts, and blood-cells. Diagnosis: Chronic parenchymatous nephritis. The amount of blood coughed up is, in the correspondent's opinion, "caused by passive congestion due to pressure," and he asks if emetine in 1-2-grain doses hypodermically would be of benefit.

We regret that you did not have the sputum examined and give a clearer idea of the pulmonary conditions, as revealed by auscultation and percussion. Doubtless, there is more or less hepatic involvement, with obstruction of the portal circulation, and, of course, the kidneys are seriously involved.

We should be inclined to place the patient upon a milk (or milk and cereal) diet. Also, give blue mass and soda, gr. 1-2, with podophyllin, gr. 1-6, half-hourly for four doses, every third night; salithia, the next morning. Apocynoid and scillitin might be given, in fairly full doses, every three hours, on the days when blue mass and soda is not administered—just sufficient to secure free watery stools. Such medication should be continued for a week, then suspended for two days. It is more than probable that emetine hydrochloride, administered hypodermically, would exert a beneficial effect on the hemoptysis. The prognosis of this case is, however, far from favorable.

This writer has had good results, in these cases, from the administration of hamameloid and collinsonoid, 1-6 grain of each, three or four times daily, taken with a mouthful of water. The patient may also, with advantage, inhale eucalyptolized steam.

QUERY 6162.—"The Causes of Edema." W. S. W., Georgia, writes that he "now and then has a patient who has swollen legs, and sometimes swollen hands also—not 'dropsy', but just swelled up; but sometimes may have backache, and other pain." He asks what treatment he might try for this condition; and, also, if this is not often an expression of autotoxemia; saying that "often these patients have urinary hyperacidity and albumin, but that some have not. The bowels are somewhat sluggish in the case of most of them."

It is decidedly difficult to answer your question relative to the proper treatment of localized edema; for, in order to institute proper therapeutic procedure, one must have a somewhat definite idea of the cause of the

trouble. "Dropsy" is a general term, and indicates an accumulation of watery fluid in the serous cavities or a general diffusion of such fluid through the tissues of the body. "Edema" designates the effusion of watery fluid into the tissue of a circumscribed area. "Anasarca" means a generalized edema.

Edema is usually due to a disturbance of the relation between the amount of fluid which transudes from the capillaries and that absorbed and carried away by the lymphatics. The causes of edema may be: (1) Venous obstruction; (2) toxemic or hydremic conditions of the blood; (3) effect of inflammation upon the neighboring circulation; (4) vasomotor or other causes belonging to the nervous system; (5) lymphatic obstruction. Besides, there is a form termed idiopathic edema, the nature of which is not yet understood.

Bear in mind that edema not due to a discoverable morbid condition is far from infrequent.

Circumscribed edematous swellings are observed over the precordial space in pericarditis; the affected side in empyema; over the mastoid process, in inflammation of the mastoid cells; over the parotid gland in mumps; over the region of the appendix, sometimes, in appendicitis; the posterior lumbar region, in perinephritic abscess; and it may be associated with a subcutaneous infection in any part of the body.

Edema of the upper half of the body is observed in the early stages of renal dropsy; of the arms, head, and neck in thoracic aneurism; hydrothorax in mediastinal tumors pressing on the vena cava above the entrance of the azygos veins; when the point of pressure is below the azygos veins, the arms, thorax, head, and neck become involved. Cardiac edema is at first localized and makes its appearance primarily in the feet, whence it may extend upward. Local edema may be caused by thrombosis of or pressure upon a venous trunk. Angioneurotic edema is a singular disease in which edematous swellings appear or disappear at frequent intervals, in the face or the extremities. It is not rarely observed.

Thus, it is evident that there can be no set treatment for "dropsy." However, correction of any underlying disorder of the body-chemistry and maintenance of thorough elimination are invariably indicated.

Calcium carbonate, with lithia, would certainly prove useful where hyperacidity is known to exist, though more marked results would probably follow the administration of some such course as this: Sodium sulpho-

carbolate, grs. 2 1-2; sodium sulphate, grs. 5; sodium bicarbonate, grs. 20; colchicine, gr. 1-500; juglandoid, gr. 1-6; xanthoxyloid, gr. 1-6; besides sodium chloride and aromatics, a sufficient quantity. Such a dose to be taken three times a day, preferably an hour before meals.

In this connection, let us suggest that you read carefully the chapters on dropsy, edema, and anasarca, in Butler's "Diagnostics of Internal Medicine."

QUERY 6163.—"Emetine and Quinine in Hemoglobinuria." R. B. K., Tennessee, wishes to know if pituitrin and emetine hydrochloride are indicated or contraindicated in malarial hemoglobinuria? He would like to learn from physicians who have had to treat malarial-fever patients in our southern regions. Also, "for the sake of argument," he asks the same relative to quinine. "This latter question," he remarks, "may seem foolish to some, but I have met many doctors who do not use quinine and, yet, have fine success."

To the best of our knowledge, neither pituitrin nor emetine thus far have been used in malarial hemoglobinuria, but, herewith we present the subject for general consideration by the readers of CLINICAL MEDICINE.

As to the subject itself, we must bear in mind that there are three theories regarding the etiology of hemoglobinuric fever, namely: (1) That it is the result, directly or indirectly, of malarial infection; (2) that quinine is the cause of it; and (3) that it is a definite disease, caused by a specific parasite.

We are inclined to the last view, for several reasons. The lesions in hemoglobinuric fever are confined to the kidneys, liver, and blood. In the viscera, acute congestion and areas of necrosis are found, evidencing the action of a powerful toxin. The blood shows a decrease in the number of red cells, and a marked increase in the large mononuclear variety. The urine not only contains hemoglobin, but also the other usual evidences of acute tubular nephritis.

Manifestly, views so divergent regarding the etiology of the disease, as above indicated, result in widely varying treatment.

Many southern practitioners, believing firmly in the malarial nature of the condition, strongly advocate the use of large doses of quinine; indeed, not a few clinicians regard this drug as a specific, although in the vast majority of instances no real proof

exists that it is of any benefit whatever. It most certainly is not if the plasmodium malarie can not be demonstrated in the peripheral blood.

On the other hand, practitioners equally well informed warn strongly against the administration of quinine, in this disease, in any form. Probably the real indication for its use in hemoglobinuria, as elsewhere, is, the established presence in the blood of malarial plasmodia. Should no malarial complication exist, it is doubtful if quinine should be given, as there is no proof, under the circumstances, that it is of benefit. Large doses, indeed, are quite likely to do material damage. Statistics tend to prove that the mortality is greater when quinine is being prescribed indiscriminately.

It must be borne in mind that there is a difference between true hemoglobinuric fever and hemoglobinuria following the administration of quinine in malarial infections. There is no question that in certain individuals both quinine and the malarial plasmodium may cause hemoglobinuria, but these attacks are not true blackwater-fever and differ greatly from the clinical picture of that disease.

Hare, in "Modern Treatment," presents the following rules as governing the administration of quinine in hemoglobinuric fever:

"1. Quinine should be administered to all patients suffering from hemoglobinuric fever if malarial plasmodia are demonstrated to be present. The dose should be sufficient to cure the malarial infection.

"2. The drug should not be given to patients in whom the malarial plasmodia can not be demonstrated.

"3. If hemoglobinuric fever occurs during the administration of quinine for a previous malarial infection and the plasmodia can still be demonstrated in the blood, the drug should be continued until the plasmodia disappear.

"4. If the disease develops during the administration of quinine and no plasmodia can be demonstrated, the drug should be discontinued.

"5. As there is no proof that quinine has the least effect upon hemoglobinuric fever and is distinctly harmful if given in uncomplicated cases, it follows that this drug should not be used in the treatment of this disease, except when a malarial complication can be proved to exist.

"6. In patients giving a history of hemoglobinuria following the administration of quinine, the drug should not be given; some

substitute for it being used if a malarial infection be present."

The use of calcium chloride has lately been strongly advocated.

In this connection, let us call your attention to a very interesting phase of the subject presented in Query No. 5882, which appeared in the February, 1913, issue of CLINICAL MEDICINE.

The correspondent in that case had had under treatment a very bad case of hemoglobinuria and he expressed the belief that one of the predisposing factors is acid intoxication. In our reply, we pointed out that most individuals suffering from malaria may receive comparatively large doses of calomel or of calomel and podophyllin, followed by a laxative saline draught; and that in a large number of cases the sulphocarbolates are given freely. Evidently, any acidemia present will, in that way, be corrected. We also pointed out that many observers in southern states agree that quinine in full doses is liable to produce hemoglobinuria; that, quinine being a protoplasmic poison, always renders hemoglobin unstable and destroys the red cells. If this action is added to the destruction wrought by the plasmodium malarie, it obviously would cause the escape of hemoglobin into the urine.

It must also be remembered that many times hemoglobinuria is the diagnosis given when, in fact, the condition we have to deal with is hematuria.

In hemoglobinuria occurring in a malarial patient, it is probable that the plasmodia malarie act directly upon the blood-cells in the parenchyma or renal tubules, such hemocytolysis causing hemoglobinuria. This question has never been definitely settled, but we do know that, in many cases of so-called hemoglobinuria, blood in large quantities has been discovered; that, in fact, hematuria existed.

Extremely high temperature is just as likely to produce hemoglobinuria as does the

ingestion of large quantities of quinine, both agencies breaking up the close adhesion of the hemoglobin to the blood-cells and causing its liberation.

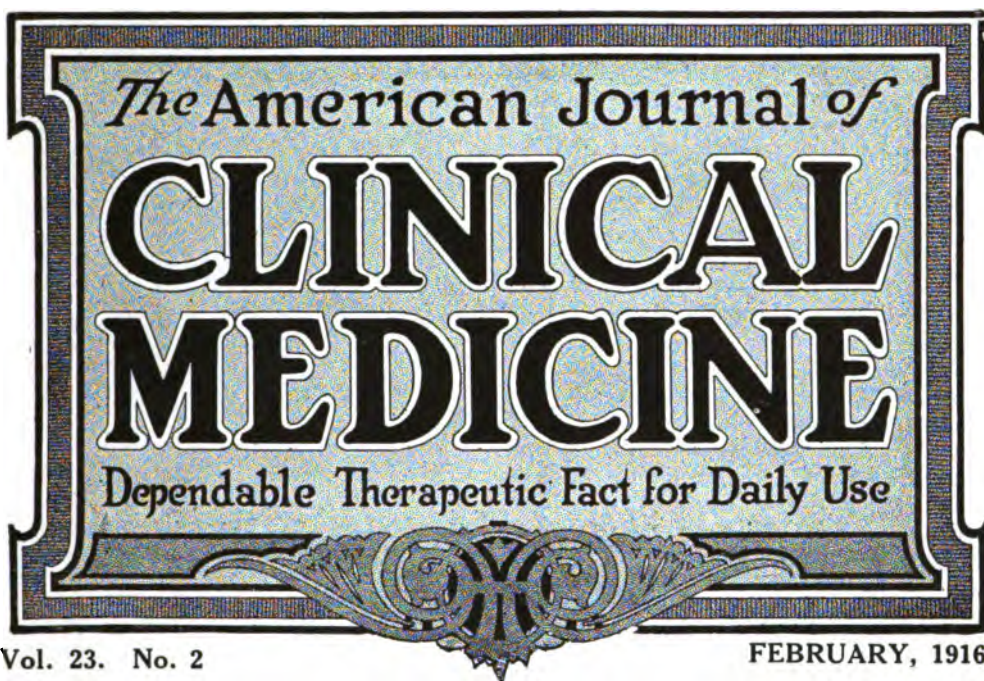
In blackwater-fever, so called, the causative agent undoubtedly is the toxins that exert a deleterious action upon the erythrocytes. This action may be increased if quinine be taken; or, the drug itself, given for therapeutic effect, may produce hemoglobinuria.

It is probable that in certain toxemias the combination of the hemoglobin with the stroma of the blood-disks has become looser than normal, and, so, causes that ordinarily would be harmless will then prove sufficient to produce separation of the hemoglobin. In this way, we could readily account for "paroxysmal hemoglobinuria," so called, which manifests itself after the initial phenomena of the chill and the quick rise of the temperature to 103 or 104 degrees. The urine voided after such a chill often is smoky or brownish-red in color and contains hemoglobin in large quantities. This condition may persist for some time, much depending upon the intensity of the toxemia—that is, the disintegration of the blood-corpuscles.

The whole subject is of intense interest, and we hope that the presentation of this question will lead to an expression of opinion from those who have had extended experience in the treatment of hemoglobinuria.

LATER.—In a letter just received from one of the most distinguished authorities on malaria in this country, who has been giving emetine a careful clinical trial in malarial hematuria, he says: "So far as I know, there are no published accounts of the treatment of malarial hematuria with emetine, but *we have tried it with marked success in this form of hematuria and hemoglobinuria, as well as in other forms.*" The testimony of this gentleman will undoubtedly lead to a general employment of emetine in this condition.





Bouchard's Great Work

NEWS has come to us quite recently of the death of Bouchard; but as yet we have received few particulars. Whether he died peacefully in his bed we know not; but this we do know—and the world acknowledges—that even among that brilliant group of modern scientists who have done so much to make French medicine illustrious there is none who has accomplished more for the benefit of mankind than has Charles Bouchard.

Bouchard took for his special study the most common of human ailments—one whose existence was scarcely acknowledged until he placed it before the world with that clarity and force for which his race is noted. Just as his compatriot, Fournier, so plainly set forth the cardinal truths about syphilis—its perils, its clinical manifestations, and especially the extended course of treatment necessary for its eradication, so Bouchard in equally clear manner told us of the deleterious consequences of fecal autotoxemia and of its curative management. Regarding both we may truthfully say that there was not so very much of original discovery or of aught that was not already known in a general way to the medical profession; but, that is exactly why in both instances

the work was so speedily taken up and the teaching absorbed by the clinicians at large—we already knew the truth of the contentions set forth by these two acute observers.

Both men took the current beliefs and submitted them to scientific investigation by modern methods, giving us consistent proof of what we already had felt to be true. We knew that the urine was toxic—Bouchard told us what were the poisonous elements in it, and which of them induced convulsions and other symptoms. We believed that fecal toxins absorbed from the bowel were responsible for much disease and for even more cases of indefinite malaise—he showed us how to detect the toxins in the urine, and he recognized the clinical manifestations. He brought together the facts about elimination and assembled many scattered bits of knowledge, to make a harmonious working-hypothesis; which subsequently has been developed into a theory, one of the fundamental principles upon which our clinical work is founded.

Thanks to Bouchard, we now are in position to recognize readily the symptoms of fecal autotoxemia; and the elimination of this factor of disease forms an essential feature of our routine measures—quite as

generally as feeling the pulse and looking at the tongue. It is a matter of course now that treatment of any kind of disease shall be begun with emptying the bowels and keeping the urine free from indican and its congeners.

Naturally, Bouchard's propositions met the opposition invariably meted out to the promulgation of radical or revolutionary theories; but it is significant that so very little attention has been paid to the opposition by the body of practitioners. Somebody gets up to assert that "there is not a scintilla of proof that the theory of fecal toxemia is really true or that the symptoms ascribed to that condition are consequences of it"; but the experienced doctor listens to such statements much with the air of him who hears someone declare that there is no such thing in nature as gold, while the hearer has his pockets full of the precious metal. This happens to be one of the cases where every doctor has the right to an opinion of his own—his own experience constitutes him a qualified judge.

While there has been a rich development from Bouchard's original work, there has been practically nothing which he had to withdraw. Lane and others have simply built upon Bouchard's foundation, and found it substantial.

Work dispels discouragement because it turns consciousness away from our disheartening littleness and lights up the big world—our world—of possible achievement.—R. C. Cabot.

"GRIP" THAT IS NOT GRIP

We are now in the midst of a pandemic of a disease that is ordinarily referred to as grip, but which, thanks to the bacteriologist, we know is not true influenza. This disease at present is epidemic from one end of the country to the other, but apparently is rather more severe throughout the upper Mississippi Valley than in the far west and the south. The United States Public Health Service has found the condition serious enough to warrant a general warning to the people of the country, in view of the very high death rate for which it seems to be responsible.

The organisms causing this disease, according to general agreement, are mainly various strains of streptococci and pneumococci, with a scattering of staphylococci, Friedlander's bacillus, micrococcus catarrhalis, and, perhaps least frequently of all, the influenza bacillus. The germs most common, most numerous, and mainly responsible for the disease are

the streptococcus and the pneumococcus, and the almost uniform presence of the latter undoubtedly explains the frequency with which pneumonia follows an attack.

The seriousness of the situation is pretty clearly shown by the death reports issued by the Chicago Health Department. Thus, prior to December 1, last, the number of deaths from pneumonia were in the neighborhood of, but did not exceed 50 per week. By December 11, the weekly number had mounted to 77; the report of December 18 gave the number of deaths as 108; that of December 25, 205; and that of January 1, the enormous total of 302 deaths in a single week from pneumonia.

The cases of this prevailing grip that have come to our attention present characteristics considerably different from those of influenza of prior years. The attacks are no less severe and the prostration temporarily is extreme; but cough is a less prominent symptom and recovery is much more rapid than in the former epidemics. In many instances, there is present a complicating conjunctivitis, aural and sinus troubles frequently occur, and sore throat is not uncommon and often severe, assuming characteristics not unlike the "streptococcic sore throat" epidemic in a number of our states some two or three years ago.

For a study of the bacteriology and bacterin treatment of this infection, we refer our readers to the fine paper by Doctor Biehn appearing elsewhere in this issue. At this point, we wish to support strongly the emphasis which he lays upon the danger of complicating pneumonia and the necessity for immediate and urgent treatment, not alone in order to cut short the attack, but to forestall the possibility of any possible pulmonary complication.

There is no doubt that prompt relief can be, and should be, secured in nearly every case by resort to a stock bacterin containing streptococci and pneumococci—either these two organisms alone or in association with staphylococci and (occasionally) Friedlander's bacillus, which latter also are sometimes factors. If a full dose of this bacterin is injected at the very beginning of treatment, in the majority of instances the severity of the attack will be ameliorated, and this is particularly true if there is a prompt reaction. Usually two doses of the bacterin are sufficient to produce the results desired.

However, no physician should rest his case on bacterin-therapy alone, valuable as this undoubtedly is in the prevailing epidemic.

There is one remedy that has a peculiar affinity for the respiratory tract, and that is iodine, this being eliminated in part through this channel.

Given in appropriate doses, particularly in combination with calcium—in the form of calx iodata—iodine can be depended upon to bring to the respiratory blood stream and the bronchial secretions a constant supply of this powerful antiseptic. It is this affinity of iodine for the respiratory mucosa that makes it a favorite remedy with so many physicians in all the diseases occurring in this area. It seems to be particularly efficacious in meeting and suppressing pneumococcic infections.

There are other remedies of almost equal value. Quinine is a favorite with many physicians, and, when given early, it undoubtedly does help to abort an incipient cold, probably because of its power of increasing phagocytosis. For the same reason, nuclein is indicated, while calcium sulphide is an active and effective germicidal agent that may well be given in alternation with other remedies.

If we were to select three agents of greatest value for aborting a beginning cold, these would be: calx iodata, quinine, and calcium sulphide.

In the febrile stages of these "grip" cases, the small, repeated doses of aconitine—alone or in the combinations represented by the two defervescent combinations, which contain veratrine, digitalin, and strychnine arsenate—will help to regulate the vascular apparatus and bring down the temperature, while relieving the pulmonary congestion.

Thorough and immediate purgation is also a necessity, especially at the beginning of the attack; and, where the upper air-passages are hyperemic, small, repeated doses of atropine or hyoscyamine, just to the point of producing slight dryness of the throat, will help to dissipate beginning congestion.

But, to recur to bacterin-therapy: In view of the tendency of these attacks of grip to become pneumonic, we urge again early resort to these vaccines; for, we are convinced that, if the indicated bacterins are administered to persons who are coming down with the disease, a protective immunity can be secured, with a saving of much sickness and very many lives.

Pneumonia is the new "captain of the men of death," claiming more victims each year than does tuberculosis, more than war, more than pestilence. Physicians should realize that it is distinctly a contagious disease, and

that, furthermore, the "harmless" common cold that makes its appearance in one's family and among one's neighbors, in very truth transmitted from hand to hand, and mouth to mouth, and home to home, is practically the cause of it all. It is a transmissible disease; but if you and I do our share, both in the way of education and in prophylactic treatment, it is quite within the reach of possibility for us to wipe this enemy of the race off the slate.

Let this be our slogan—"Pneumonia next!"

Ah Love! Could you and I with Him conspire
To grasp this sorry scheme of Things Entire,
Would not we shatter it to bits—and then
Remould it nearer to the Heart's desire!

—The Rubaiyat.

MAKE A GOOD APPEARANCE

The writer remembers an old joke, that was going the rounds of the funny papers when he was a young fellow, concerning a man who found a scrap of paper in his pocket, with hieroglyphics scribbled all over it, and who scratched his head in considerable perturbation as to whether it was a prescription from his physician or a check from the Chinese laundry.

This is an extravagant story, of course, but with a good-sized grain of truth in it. It is not so very long ago that it was considered quite professional to write prescriptions and letters in an almost undecipherable hand; indeed, a physician's reputation and standing were in direct proportion to the illegibility of his handwriting. Which, by the way, was pretty hard on the dispensing pharmacist; and I rather think it was because of the mistakes that the druggist made, very excusably, every once in a while, and the consequent protest of pharmacists as a class that this one time abominable habit of physicians fell into disrepute.

However that may be, happily, it is no longer regarded as a mark of erudition on the part of the doctor to scrawl so that nobody can decipher his writing, particularly prescriptions. Not at all, on the contrary, quite the reverse, as Artemas Ward used to say. We understand that the professional man in England still clings to his pen and ink; but in America even this practice, so far as its traditional aspect is concerned, has gone by the board—along with a great many equally foolish traditions—in favor of the more sensible modern use of the typewriter.

As has frequently been insisted upon in these pages, the practice of medicine, in itself,

is not, and never can be, a business; and latter-day attempts to turn it into a business not only have wrought all sorts of havoc with the profession, but have brought disappointment and heartburnings to those who have tried the experiment.

On the other hand, as has just so frequently been pointed out, there is not the slightest reason why the business functions that necessarily accompany the practice of medicine should not be carried out in a businesslike manner. In this country, at all events, we long ago have dismissed the groundless idea that good science and good business are incompatible; in fact, we have just about reached the opposite conclusion, namely, that a man can hardly be a good scientist, certainly not a good practical scientist, if he is not a good business man. At any rate, we have come to the point where the earmarks of a good business-like temperament predisposes us to a favorable estimate of a doctor's scientific capability.

This twofold characteristic, in fact, may be said to constitute the distinguishing mark between the old-fashioned and the modern up to date physician—the workman-like fitting of his workshop and the business-like appearance of his *entourage*. The former equips him to do good work; the latter bodies forth his value to the world, in precisely the same way (do not be offended for our saying it) that the store-window and advertising-matter display the character of a mercantile house.

Not, by any means, least among the features of this latter *accoutrement* is the neatness and elegance of his correspondence. A tasteful letterhead and prescription-blank, a neatly typewritten letter and prescription, these have immense influence in the opinion which the public forms of your character and efficiency; and rightly so, for they do actually reflect your attitude toward your clientele and your work. Those with whom your professional relations lie have a right to expect of you the courtesy and consideration expressed in such amenities; and if they find you slipshod in these little things they are justified in assuming that you are equally shiftless in the greater things.

In former days, a neglect of these matters might have been excused on the ground of prohibitive expense, but today no such excuse is valid. Not only are good stationery and serviceable typewriting-machines comparatively inexpensive, but the terms upon which the latter can, nowadays, be bought are within the reach of virtually every prac-

titioner. We are carrying, every month, in the advertising-pages of this journal the most liberal offers from typewriter concerns, which make it possible for every physician to conduct his correspondence and his prescription writing in accordance with twentieth-century demands. And, in fact, he *must* do so, if he is to keep up with the modern procession.

A small matter, you think? Yes, but small things make perfection; and perfection is no small matter! If you have not considered this before, doctor, do so now. Buy a typewriter, get yourself some highgrade, tasteful stationery, and make upon your clientele and correspondents an impression that is commensurate with your actual worth.

What'er you dream, with doubt possessed,
Keep, keep it snug within your breast,
And lay you down and take your rest;
Forget in sleep the doubt and pain,
And when you wake, to work again.
The wind it blows, the vessel goes,
And where and whither, no one knows.

'Twill all be well: no need of care;
Though how it will, and when, and where,
We cannot see, and can't declare.
In spite of dreams, in spite of thought,
'Tis not in vain, and not for nought,
The wind it blows, the ship it goes,
Though where and whither, no one knows.
—Arthur H. Clough.

OUR ANNUAL INDEX

Following our practice of several years back, we did not bind the annual index with the December number of the journal. It has been prepared, however, with our usual care, and by the time this number of CLINICAL MEDICINE reaches you we hope it will be ready for distribution. A copy will be sent gratis to any subscriber requesting it. It is our sincere wish to give it the widest possible distribution among our readers, and, so, we hope that all, without exception, will write for it, and then have their journals nicely bound; for, as every careful reader will agree, a bound volume of CLINICAL MEDICINE constitutes a veritable encyclopedia of current medical knowledge. The physician who has on his shelves a series of these volumes can find in a moment just the help he needs in almost any emergency.

We are particularly proud of this year's index. It has been prepared with greatest care, by one who has specialized in the difficult work for many years. It is voluminously cross-indexed, and with all will be found indispensable to any busy practitioner who has acquired—as he certainly should—the index-habit.

Please send in your request immediately, right now—a postal card will do. We may add that we have in stock a limited number of the indexes for some of the preceding volumes; and a copy (while they last) will be sent to anyone wishing to bind back volumes.

Drudgery is as necessary to call out the treasures of the mind as harrowing and planting those of earth.—Margaret Fuller.

THE PROGRAM OF THE AMERICAN COLLEGE OF SURGEONS

We have received from John G. Bowman, director of The American College of Surgeons, a statement of the plans made for the development of the work of this organization. We learn that the 3400 Fellows of the College living in the United States and Canada have begun the new year by raising an endowment of \$500,000, this fund to be held in perpetuity, for the purpose of advancing the standards of surgical knowledge and training in America.

It is certainly indicative of its fine spirit, splendid organization, and remarkable capacity for teamwork that the College has been able to evolve, without friction or other difficulty, an intelligent plan for constructive work; and this plan is to find concrete expression, we are informed, along the following lines of activity, which are made possible by the endowment-fund now available:

1. The College purposes to supervise and standardize the preparation of students for the practice of surgery and allied specialties. The regents of the College will begin this work by asking every senior medical student who has in mind specialization in general or special surgery to register his name with the College. As these students serve later as internes and surgical assistants, careful record of their activities will be kept by the College, so that their ability, character, and fitness for admission to fellowship in the College may be determined; the purpose being, not only to utilize this preliminary supervision as a test for membership, but also to stimulate the young men themselves to do better work; all this with the view to the creation of a class of surgeons, in this country, of whom we may all be proud.

2. The College is planning to collect and classify all possible information relative to our American hospitals. This information will be published from time to time, in form available for distribution, and will deal with such problems as hospital equipment, laboratory equipment, the keeping of case-records,

the training of nurses, and the various forms of specialization essential to the conduct of any well-organized hospital. In other words, as we understand it, the purpose of the College is, to endeavor to "standardize" these institutions, with the object of improving the quality of all of them, in order to enable them to do better work.

3. The College expects to ask the faculties of our medical schools to consider the advisability of conferring a supplementary degree of efficiency in general surgery and in the various surgical specialties.

4. The institution will issue, from time to time, monographs of an educational nature relative to medicine and surgery, suitable for distribution among the general public, managers of hospitals, and the medical profession at large.

This program, we submit, is a splendid one—one which we believe will win the hearty approval and cooperation of the medical profession as a whole. During the early days of The American College of Surgeons, there was aroused a great deal of criticism of this organization within the profession, on the ground that it would have a tendency to create what was loosely called a "surgical trust."

Every physician is, necessarily, more or less of a surgeon. In America, at least, the welfare and the interests of the general practitioner and of the surgeon and other specialists are inextricably bound up with each other. The fear was expressed that any scheme of things intended to set one portion of the profession apart from and above the other would have an undesirable, undemocratic effect.

Such a possibility must, of course, be kept in mind, though we feel that an organization having the high ideals and the splendid purposes expressed in this general scheme for the betterment of one branch of the profession, in the end can work only good. Its excesses—if any such develop—are sure to be checked and controlled by the severest criticism. And, frankly, we hope there will be free, searching criticism, since this is the saving clause of our democracy; and we further fervently hope that the time never may come when the "holier than thou" spirit will control our medical institutions.

There is much in the plan of the American College of Surgeons, as outlined above, that may well be incorporated in the plans of the entire profession. The feature that particularly appeals to us is, that these plans are constructive, not destructive; that they aim

to build up rather than to tear down; that they begin at the bottom, with the membership; lastly, that the ultimate aim is, not, indeed, the creation of a special caste, that would try to run things by privilege or through politics; but, rather, the raising up of a generation of strong, well-informed, self-respecting, skilful surgical practitioners.

If there is any work that requires the delicacy and finesse of the college president, the corporation executive or the foreign diplomat it is that of the medical practitioner with a large and varied practice.—Edwin P. Haworth.

KNOWING MIGRAINE—TREATING IT

The modern study of migraine began with Anstie, whose two books, "Stimulants and Narcotics" and "Neuralgia," set the world to thinking. Many phenomena described by Anstie are still acknowledged today as characteristic of the true neuralgias. Among these, he placed migraine; and that this is a neuralgia most of us will admit. However, in his day, autotoxemia had not been thought of; although before him the custom of the profession, to begin treatment, as a routine measure, by emptying the stomach and bowels, was a quite general one for the condition, the nature of which has since then been discovered. We look now upon the bad breath attending migraine, not as a symptom of that disease, but as evidence of its cause.

Not all cases of migraine are attributable to the intestinal tract. Some of these attacks attend menstruation too regularly to be accidentally coincident. Heredity is a recognized factor. Eyestrain, ethmoidal, nasal, aural, dental, and pharyngeal disease have all been shown to be so associated with migraine that specialists in each, seeing many cases in their own respective departments and none in the others, are prone to credit their own pet apparatus with the causation of every case of migraine.

To the foregoing causes, Shoyer adds the ductless glands as a probable source. This author calls attention to the cases that begin with the setting in of menstruation and end with the menopause. This leads him to surmise that there may be present some disorder of an internal secretion, from the thyroid or pituitary gland or the corpus luteum. If this be so, observations might be instituted concerning the influence of marriage upon women subject to migraine, in consideration of the consequent stimulation of the thyroid gland. The addition of thyroid or corpus-luteum extracts to the eliminant remedies

always indicated might work well. Still, Shoyer rather spoils his own proposition by adding cannabis to his prescription. If this agent be requisite, then the influence of the animal-extracts can not be, in itself, sufficient. However, the influence of habit is always to be considered, for, any neurosis may persist after the original exciting cause has ceased to act.

Harrower, in a valuable contribution to *American Medicine*, cites some corroborative evidence. Kovalewski observed the disappearance of migraines during pregnancy, when the thyroid gland was stimulated to increased activity. Levi succeeded in six cases of migraine by giving thyroid extract. Charcot had noticed the connection between migraine and chronic rheumatism, and the relief of both by prescribing thyroid gland. Gauthier insists upon the connection between migraine and thyroid or ovarian disease.

Harrower suggests doses of luteal extract, 5 to 8 grains, with 1-4 to 1 grain of thyroid extract, three times a day for two weeks, this period ending just at the entrance of the menstrual period, the remedies to be omitted during the subsequent fortnight.

We are not convinced, and should limit the treatment to cases in which there are other evidences of thyroid-gland deficiency. Then, as is so frequently the case, we should probably find that the remedy given for the deficiency also benefited any other morbid condition present at the same time. Also, we should not omit that attention to the alimentary canal which alone cures so many migraines.

If you think you are outclassed, you are;
You've got to think height to rise,
You've got to be sure of yourself before
You can ever win a prize.
Life's battles don't always go
To the stronger or faster man,
But soon or late the man who wins
Is the fellow who thinks he can.

THE INDICATIONS FOR ALCOHOL

This journal has long since taken the stand that there is no true indication for alcohol as a medicine, and that its use as such is a mere excuse for indulgence or laziness. We assert that there is not a solitary application to which alcoholic preparations can be put for which there are not better remedies at our hand. The one reason for the use of alcohol as a remedy is, that it does so many things fairly well; and the lazy doctor contents himself with this, instead of finding the one remedy that is better in each case.

A plea for alcohol as a remedial agent appears in one of our exchanges, a journal of deservedly good reputation and high standards. We do not mention the name of this publication, since, in our opinion the argument presented for alcohol should be taken upon its merits, irrespective of the interests back of it. What concerns us is, the truth or the falseness of the thing, and not whether the article is engraved on tablets of gold or imprinted on pitch. Let us examine in detail the claims made by our colleague.

The first indication claimed for alcohol is when pneumonia occurs in a person accustomed to the daily taking of alcohol, though not necessarily to excess. Here, it is advised to give small doses of the stuff every three hours, to prevent the nervousness and depression occasioned even in health by stopping the stimulant.

More than a half century ago, N. S. Davis began the movement against the use of alcohol as a medicine, and this has steadily grown until now it is generally admitted that this agent is not the necessity it was then considered. This use in the pneumonia of drinkers was one of the last strongholds of the alcohol-advocate. Everyone who has tried impartially to do without it here has found Davis right and shown alcohol to be useless.

The chief peril in pneumonia is toxemia; yet, alcohol itself is a most potent cause of toxemia—it adds a danger here as in so many other cases. Such a patient needs elimination and cardionervous support; and his peril is greater than that of the nonuser of alcohol. Careful nutrition, coffee, cardiac tonics, and elimination will save more lives if the alcohol is omitted. Nervous phenomena indicate the need for more elimination and a suitable supply of food; the only indication added by reason of the alcohol-habit is, extra care of the heart.

The second indication is, in some cases of delirium tremens (not many), where small doses are advised, large ones being always deleterious. Here again the experience of those who have treated many cases, in hospitals, is against this plea. Every drop of alcohol taken by the delirium-tremens patient militates against his chances for recovery. We have passed many phases in the treatment of this malady, beginning with the sedatives and narcotics and ending with the eliminants. This condition is a pure toxemia, and it is successfully treated with emetine, purges, pilocarpine, and by very carefully sustaining the vitality—and especially the

heart. Capsicum gave better results than narcotics; coca was an advance; but the modern method, by elimination, leaves nothing to be desired as to results, especially when the right eliminant is selected.

The third indication is, when alcohol is being withdrawn from habitués with arteriosclerosis, degeneration of the heart-muscle, kidneys, perhaps of the central nervous system; when the alcohol should be withdrawn gradually. This can scarcely be called an indication for alcohol, and there may well be a psychic need for the procedure, as the patient may not be willing to stop suddenly. Moreover, we are not indisposed to acknowledge the influence of habit, and the possible peril in abruptly stopping even a bad habit in persons well past the age of growth. But the evil is often due to the fact that the semblance of robust health may have been imparted by the alcohol, while its withdrawal leaves the patient as he really is; seemingly worse, although he may be truly in better condition. "He was a mere shell of a man" we often hear when such a one falls under some trifling malady.

Fourth: Severe cases of diabetes mellitus; "Diabetics apparently are able to burn up large quantities of alcohol, not only without detriment, but with great benefit. . . . During the oatmeal-days, alcohol can be used in large quantities, with good effect."

This point should be left, for discussion, to the specialists in diabetes. In his own practice, the present writer has not found need for alcohol in such instances, although he can see how these self-indulgent people may more readily submit to the occasional "oatmeal-" or "potato-" or "greens-"days if these viands are plentifully seasoned with booze.

These are the only indications given by the author referred to at the outset; but he adds: "In the whole range of infectious fevers, alcohol was thought to be a necessity; but professional opinion has changed. It is not to be employed as a heart stimulant, but may be justifiably used as a narcotic in certain cases." We are scarcely so poor in narcotics that we must take this doubtful and dangerous agent, alcohol, for such use. The profession has hardly begun to realize here the value of the mild nonopiate members of this group. Many a time a dose of *passiflora* will answer the need perfectly. To those who know *gelseminine* and *cicutine* hydrobromides, neither alcohol nor opium-derivatives are a necessity here.

The contraindications for alcohol, as enumerated in the article in question, are interesting. Here they are:

(1) As an appetizer, (2) as a food, (3) tuberculosis, in all stages, (4) nervous diseases, (5) exposure to heat and cold, (6) snakebite and other acute poisoning, (7) normal health.

It will be seen that in at least three of these—the third, fifth, and sixth—alcohol was, until recently, employed, and they formed strongholds to which the alcohol-advocate retreated when beaten out of all other positions.

The whole article shows how very little the pleader for alcohol can find to claim in its favor; and when the objections are marshalled against it, in these few possibly useful applications, there is only one real reason left for using alcohol—and that is—that the user wants it.

Loyalty is a force that holds a man to his job even in moments when he hates it. . . . It bids us be prompt at the office, to answer all letters at once, to look as brisk and interested as we can, till the mood passes and the familiar objects and occupations resume their halos.—R. C. Cabot.

INDIANA AND THE DISPENSING DOCTOR

From a number of our subscribers in Indiana we have received requests for information concerning the exact meaning of the Indiana state narcotic law. It seems that alleged representatives of the Indiana State Board of Pharmacy are calling upon physicians of the state and advising them that, according to the wording of the law approved on March 6, 1913, it is unlawful for them to *dispense* any narcotic drugs whatever. This interpretation is said to be based upon a paragraph in the law that reads as follows, emphasis being placed upon the distinction between “administer” and “dispense”:

“That nothing in this act shall be construed to prevent the legitimate administering of said [narcotic] drugs, their salts, compounds, and derivatives, by a duly registered practicing physician, duly licensed veterinarian, or duly licensed dentist.”

We recall distinctly when this act became a law. At that time, it was explained, and was so understood and accepted by the medical profession of Indiana, that the word “administering,” as here used, was intended to convey the meaning of giving—dispensing—drugs to their patients. But now another construction is being placed upon the meaning of this word, this construction no doubt

following upon the interpretation of the meaning of the word “administer” given by the Federal Commissioner of Internal Revenue in one of his recent regulations.

We do not live in Indiana—and just now we are glad of it. But, if we did, we are inclined to believe that we would join with other physicians to give this interpretation of the law a very merry fight. If the word “administer” was purposefully introduced, with the distinct object of putting restrictions upon the medical profession of Indiana, then, surely, the physicians of that state have a bone to pick with its pharmacists; and we are convinced that, if any movement or propaganda for the literal interpretation of this absurd section is undertaken, the doctors of the old Hoosier state will rise up in their wrath and give the druggists a fight they will long remember. Indeed, we are advised that the medical societies in Indiana are not inactive and not asleep; that they are fully cognizant of the situation, and preparing to do battle, if that becomes necessary.

If it is the purpose of the pharmacists of Indiana to interfere with the practice of medicine in their state, it is our opinion—and not an humble one, either—that somebody has taken hold of a boomerang. In the long run, any effort on the part of any profession to legislate for another profession—be it that of law or medicine or theology—is going to get somebody into trouble.

And, so, all good friends of pharmacy, whether resident in Indiana or anywhere else, will join with us, we are sure, in the opinion that the leaders of the Indiana pharmaceutical profession, who are said to be back of this movement, must have been improperly quoted. We certainly do hope so, for nothing could be more unfortunate than to revive the old animosities between doctor and druggist. We had sincerely hoped that these were disappearing. We still entertain the hope that this is so.

Let us all bear in mind that the only way to increase the feeling of friendship between the two professions is for each side to give and each to take; each to be fair and just, each to be thoughtful of the interests of the other, each considerate of the circumstances under which the other man earns his bread.

However, if there is to be a fight in Indiana, we are with our good friends, the Indiana doctors. Forewarned is to be forearmed. The situation should be probed right now and a clear, definite understanding reached.

The physicians of Indiana, as well as of every other section of the country, want

to know exactly where they stand in this matter. We hope somebody will inform us of the exact status—tell us just how matters stand, plainly, succinctly, truthfully.

The pages of CLINICAL MEDICINE are open to any Indiana doctor who has positive information about this matter. Then, if there *must* be a fight, *we are ready*.

There is an idea abroad among moral people that they should make their neighbors good. One person I have to make good—myself. But my duty to my neighbor is much more nearly expressed by saying that I have to make him happy, if I may.—Robert Louis Stevenson.

CHRONIC INTESTINAL STASIS: ETIOLOGY AND TREATMENT

Lane's discovery of the intestinal kink was received with notable enthusiasm. The surgeons had about exhausted the possibilities of appendicitis, ptosis, and decapsulation, and these seemed about ready to follow oophorectomy into the oblivion that comes swiftly when novelty fades. Lane opened up a new field for the men of the knife, and they were duly grateful. The opposition is forming, however; and this comes, not from the despoiled internists, but from the laboratory. The latest presentation from this side is the paper, in *The New York Medical Journal*, by Dr. Anthony Bassler.

After careful study of this article, we are inclined to think that the writer is of the type of men who are somewhat difficult to convince and present stumbling-blocks in the path of the enthusiast who takes all movement for progress and change for betterment.

Moreover, the laboratory is growing exacting, complicated, and tedious; and in direct ratio less willing to give that plain and decided opinion for which we of the bedside clinical persuasion have so longed. How we have yearned for something like positiveness to replace our ancient guessing; and how hopefully we have looked to the laboratory for that boon. But just see what Bassler demands as bases, so as to enable him to make an inductive—although, he hastes to add, not conclusive—picture of chronic intestinal stasis, to-wit:

1. Attacks of abdominal distress, generally epigastric or right ileac, not associated with food taking.

2. Local tenderness in the right ileum and the hepatic flexure.

3. Constipation, perhaps preceded by abdominal pain or alternated with diarrhea and mucous discharges.

4. Sense of gas distention in right abdomen, perhaps causing palpable cecum, with splashing there.

5. Symptoms of intestinal intoxication; malaise, lack of energy and endurance, headache, backache, anorexia, sallowness, muddy complexion, rings about eyes; armpits, groins and popliteals stained; malodorous breath, neurasthenic symptoms, abdominal and general; loss of weight or standstill, notwithstanding appropriate dieting.

6. Functional eye symptoms, disturbed reflexes, neurotic insomnia, heart-rate slow or fast, causeless urethral distress, coccygodynia; subjective pains in left hip, flank, and subscapular region.

7. Prolonged stoppage of bismuth at certain points in the intestinal canal—often fallacious, if taken alone.

8. Careful examination of stools and urine, under innumerable precautions, with showings taking half a column to describe. Determination of these latter data Bassler considers the most valuable method of diagnosing the condition under discussion; namely, chronic intestinal stasis.

All of which goes to show why medical practice can never be reduced to a mathematic basis; for, who is going to all this trouble and expense to determine whether a man needs a dose of salts? Medicine will always be a matter largely of swift intuition, pre-knowledge, guesswork if you will, with psychiatry back of most of the therapeutics.

Follows an exhaustive review of Lane's and Kellogg's theories, in which the very slender evidence in their favor is demonstrated and the unsatisfactory results of the operations are revealed. The lack of correspondence between the symptoms and the asserted lesions, the return of symptoms after the removal of the assumed cause, and especially the neglect of these observers to begin their investigations by taking normal subjects, are given in direct, logical, unanswerable terms.

The conclusion: "To me, intestinal stasis is a medical matter almost entirely. Surgical procedures for conditions that ensue as results or complications may be necessary in individual cases, but never the major surgical procedures of Lane for nonobstructive stasis or toxemia, his form of operation for disease in tissues remote from the abdomen, partial types of resections or anastomoses, being performed in the absence of marked disease or obstruction. From long neglect, many of these cases have local conditions requiring surgery, but there should be only such surgical procedures as have been known

for years, procedures necessary to remove badly diseased areas, not those of glorified abdominal plumbing in which the mortality is high, the results more liable to be transitory, negative or bad, rather than good, in which moral effect, medical treatments, and others deserve the credit rather than the enthusiasm of the surgeon or the form of operation done."

Finally:

"To substantiate the importance of the bacterial-food origins, we should begin the study of stasis by examining the stools of children and young adults. It is not only in the acute diarrheal disturbances of young children that this subject is important, but even more so in bacteriological changes afterward, causing the chronic infections. There is a normal bacteriological status in the intestinal canal of human beings, and it is surprising how uniform this is in a large number. Every case of intestinal toxemia shows this to be away from normal, and in practically every adult case the infection had existed for years—mostly from childhood.

"If we are right in our etiological and diagnostic beliefs, that diphtheria-bacilli in a sore throat mean diphtheria, typhoid-bacilli in stools and general system mean typhoid, pneumococcus in sputum means pneumonia, and tubercle-bacilli mean tuberculosis, and so on through the most valuable advances in medicine in all stages of its career since its beginning, then it is biologically important, on etiological, diagnostic, and therapeutic lines, that the intestinal infections must so be considered. My researches in the pathogenic types show this to be true, the organisms found being in the colon, the pseudodysenteric and true dysenteric forms, the aerogenes capsulatus, streptococcus faecalis, alpha and beta types of paratyphosus, the so-called "slimy bacillus," the proteus, alcaligenes, pyocyanus, butyricus, entericus, macerans, putrificus, subtilis, paratyphoid, and others that may be important in individual cases.

"It is upon the presence and activity of these organisms that the true cause of intestinal stasis is based, and the time must come when this fact will be generally recognized, even though this kind of work is difficult of quick understanding and application both in diagnosis and treatment."

WATCH THE LEGISLATURES

The situation in Indiana, referred to in a preceding editorial, should serve as a warning to physicians living in other states

where similar legislation is likely to be enacted. For several years back we have been advising our readers to watch the legislatures. We repeat that warning now.

Fortunately, only ten legislatures will be in session this winter. We learn from *The Medical World*, which has been doing valiant work for the doctor—work which every physician should appreciate at its full splendid value—that the legislatures of the following states will meet this year: Kentucky, Mississippi, Maryland, Virginia, New Jersey, New York, Rhode Island, South Carolina, Massachusetts, and Louisiana.

We advise every physician living in any one of these states to write his state senator and representative to send him copies of every bill introduced affecting, or likely to affect, the interests of the medical profession. These bills should be studied carefully, and if they are found dangerous or subversive of the rights of our profession, they should be fought with earnestness and vigor through the county and state medical organizations.

WHY I AM MAKING GOOD

I believe in my work.

I have prepared myself carefully for it, and am improving myself, every day, by study and observation.

I take several medical journals, read the new books, attend the medical meetings, and keep a careful record of my cases.

I try to be thorough, approaching every case as if it were a mathematical problem which can be solved only when I know the value of x and y .

I take no thing and no man merely "for granted"; "search farther" is my motto—and I am looking in out-of-the-way places and books constantly for things that will help me to help my people.

I do not sulk, knock, welch or complain, but keep pleasant, keep smiling, trying to be, as well as seem to be, a friend to every man, woman, and child in my town.

I am neat in my personal appearance. My nails are never "in mourning," my teeth are always white, my hands always clean, and my clothing scrupulously neat.

I am ambitious. I am determined to do better work next year than this year, and to have a better and more lucrative practice sometime—perhaps in a better town.

I am square, and my people know it—but my life advertises this fact, not my words.

I am modest, but honestly anxious to know people and to have them know me,

and for that reason I am called "a good mixer." I have found that it pays to be friendly with folk, to get acquainted with them, not only because it brings me business, but also because it warms my heart and makes me a happier man.

Now you know why I am making good.

What a place to be in is an old library! It seems as though all the souls of all the writers that have bequeathed their labors to these Bodleians were reposing here as in some dormitory, or middle state. I seem to inhale learning, walking amid their foliage; and the odor of their old moth-scented coverings is fragrant as the first bloom of those scintial apples which grew amid the happy orchard.—Charles Lamb.

VARIOUS VEGETABLE FEVER-REMEDIES COMPARED

In his new work, "American Therapeutics," just off the press, Ellingwood gives an excellent comparison of the applications of five fever-remedies, and this information is so interesting as to deserve of reproduction here, in substance, as follows:

Aconite.—Indicated at the onset of fevers, during sthenic fevers, and in small doses during protracted asthenic fevers; emphatically the child sedative, applicable in midlife, less prompt in age; in all acute fevers and inflammations, with rise of temperature; heart strong and rapid, pulse quick, sharp, hard, in asthenia soft, small, feeble, but regular, very small doses; fever always present in acute—heart and pulse must guide in chronic; skin hot and dry, capillary circulation actively engorged, eyes bright; mouth dry and parched, tongue pale, soft, white coat, moist or dry and harsh, with brown stripe; secretions may be abruptly suppressed; general distress and headache, local pain at seat of inflammation.

Gelsemium.—Sthenic cases, with nervous irritation, spasm threatening, or acute cerebral engorgement, neuralgic pains; excellent in infancy, full doses for strong adults, less frequently for aged; acute forms of cerebral engorgement, nervous irritation and excitability; heart strong, irritable, violent action, increased muscular power, exalted nerve force in heart disease, never in feeble heart; fever usual, of nervous type; skin dry and hot usually, face flushed, bright red, eyes bright, pupils contracted; red tongue, dry or moist, in protracted nerve irritation dry and dark red; secretions usually suppressed; severe headache, with extreme restlessness, local pain of nervous origin, and acute neuralgias.

Veratrum.—Only in sthenic cases and in convulsions, or threatened convulsions with rapid heart action; for strong adults and women at childbirth, hard to adapt to infants, seldom for aged; threatened head engorgements or convulsions; heart strong and rapid, pulse full, large, hard, or small, hard and very fast, never in feeble heart; fever usual, heart-action rather than temperature the guide; skin may be cool, bright red or dull red; tongue dry, red stripe in middle; skin and kidneys usually free in action, except in uremia; pain dependent on cause, may be local, may be bursting headache as in puerperal convulsions.

Bryonia.—Applicable in either sthenia or asthenia; any age, weak or strong, infants and aged; serous or synovial inflammations, or of organs covered by serosa, as pulmonary and intestinal structures; heart may be weak or strong, pulse quick; is not heart depressant in medicinal doses; fever present; skin usually hot, moist or dry; red spot on one or both cheeks; tongue dry, usually coated, membranes dark; secretions usually deficient; quick shooting, darting pains; local soreness, tenderness on pressure; general muscular aching.

Rhus Tox.—In sthenia or more frequently asthenia; all ages by adjustment of doses and study of indications; local inflammations, involving skin, with redness, circumscribed tenderness, heat or pain; typhoid conditions or low protracted fevers; quick pulse, rapid, usually soft, feeble, compressible, or may be hard or wiry; fever present; skin usually very hot, especially in circumscribed area, which is bright-red; membranes dark, tongue dark, pointed, red tip and edges, elongated papillæ; secretions usually suppressed; pain in inflamed area, general muscular aching.

We have learned to associate these vasorelaxants with all conditions showing vascular, tension, or any tendency to vasospasm; hence, with fevers and neuralgias, where they are distinctly anodyne. Very often the nervous tension that prevents sleep will give way to a few doses of aconitine, and refreshing slumber will follow without resort to any hypnotic, much less to the perils of opiates. We have yet to meet the doctor who has become familiar with aconitine and looks on it as an unsafe remedy, even for infants. Given in the minute doses every quarter to half hour until effect, it is the ideal of a safe and manageable febrifuge.

Gelseminine is a remedy that grows on one the more it is used. We have largely dis-

continued the use of morphine since learning how frequently this relaxant substitutes it, with better effect, since it never checks the secretions. It is distinctly anodyne apart from its vasorelaxation, with selective sedation in the pains of the genitourinary tract.

Veratrine is a reliance in sthenic inflammations, and whenever fevers are associated with defective elimination. We look on it as of great value in such toxemias as eclampsia and uremia; and we like its action in arteriosclerosis with high vascular tension. When we hear a doctor talk of its "dangerous" character, we feel the same pitying compassion as when the old darky asserted that "the sun do move." Yes, rather a sense of indignation that a man who should, and could, so easily learn the truth, should not take the trouble to do so. All one need remember is, to give veratrine in small frequent doses, and stop when there is a sense of warmth in the stomach. Is that so hard?

Bryonin is chiefly given for pleurisy and dropsies, as a diuretic. Its place is less firmly established, but many of our readers are well able to discuss its merits.

Rhus has long been a favorite and has been employed in rheumatism, especially when the muscles were involved, in erysipelas, low typhoid states, and the exanthemata with hyperacute involvement of the skin. It is an odd remedy, and does not seem to affect all persons alike.

This group of five remedies would make an excellent subject for clinical investigation. Suppose some of our readers put Ellingwood's indications to a fair and impartial test, neither seeking to support or contradict him, but simply to ascertain the truth—and let us know the results.

THE TREATMENT OF FLATULENCE

We find a discussion of the treatment of flatulence in the September 4 number of *The New York Medical Journal* (p. 518), the contributors being Newman, Casale, Eichhorn, Sutton, and Martin.

In *gastric flatulence*, Newman says, hypodermic injections of 1-10 grain apomorphine usually will give instant relief—by emptying the stomach, of course. He finds Hoffmann's anodyne, given in dram-doses every fifteen minutes, the best carminative. Spirit of camphor also is useful. In such cases of gastric atony, Casale restricts the diet to milk, to be given every two hours, and kept

up for a week or more, until the symptoms disappear. No fluid should be taken with meals. To combat fermentation, when there is insufficient acid, he gives dilute hydrochloric acid, 20 minims in half a glass of water, to be sipped through a straw during the meal. If there is heartburn, sodium bicarbonate or calcined magnesia is advised.

This writer's experience is, that relief ordinarily is secured by means of intestinal antiseptics (the sulphocarbolates), with some carminative, such as menthol. When there is gastric atony, capsicum and nux vomica are very effective.

In *intestinal flatulence*, Newman finds camphor, asafetida, and pancreatin beneficial, while, he declares, in the flatulent colic of old persons and others, capsicum is the remedy. This not only acts as a carminative, but will prevent the development of gas. To remove the gas from the bowel, he orders an enema of castor-oil and sodium bicarbonate, and hot applications to the abdomen.

This writer's experience is that the addition of a few drops of oil of turpentine to the enema will make it more efficient. Of course, the entire upper intestinal canal should be cleaned out with calomel and a saline laxative.

In cases of *intestinal atony*, the very best remedy is physostigmine, which may be given hypodermically in cases of emergency. This is the remedy above all others for the flatulence caused by paresis of the bowels (paralytic ileus) following abdominal operations.

Flatulence is often, in fact, usually, associated with chronic *intestinal stasis*. The use of mineral oil, possibly administered in the form of a palatable emulsion and, given over a prolonged period, will relieve all cases not requiring surgical intervention.

In treating the *putrefactive forms* of flatulence, adds Martin, it is desirable to give, besides the other drugs, the Bulgarian lactic-acid bacillus, which is now available in dependable tablet form.

Another remedy that is excellent in intestinal flatulence, as also in gastric disorders, at all ages, marked by hyperacidity, is the so-called neutral cordial of the Eclectics.

Colic in children generally will yield to a warm enema, and a course of treatment with a mineral-oil laxative. Some good carminative may be used for the relief of pressing symptoms.

Isn't this topic of sufficient interest to deserve comment by the readers of *CLINICAL MEDICINE*? We are sure that many of our busy readers can find time for "just a line".

Leading Articles

The Present Pandemic Simulating Influenza

Its Etiology and Treatment

By J. FAVIL BIEHN, M. D., Chicago, Illinois

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SOME months ago, in various parts of the country, especially in the large centers of population, there set in an epidemic of an acute infection of the respiratory passages, clinically very similar to influenza—popularly referred to as grip. The disease is, unquestionably, contagious and air-borne; having none of the characteristics, now so well recognized, of a milk-borne infection.

The infectiousness of this disease is particularly great, usually the majority of individuals of a household, office or other establishment being attacked. So far as I am able to ascertain by personal observation, in several school-rooms, the number of those attacked in these groups ranged between 38 and 82 percent. Those suffering from chronic catarrhal conditions, especially chronic infections of the antrums, are first attacked, the more or less normal individuals not so affected usually contracting the disease somewhat later.

The incubation period in several instances that came to my notice was between twenty-four and forty-eight hours. No age is immune, while both sexes seem to be equally subjected to attack.

Review of Bacteriologic Findings

As to the etiology of this disease, it has not as yet been definitely settled what bacteria are involved. Still, most bacteriologists are agreed that, primarily, it seems to be a streptococcus-pyogenes and pneumococcus infection, these organisms—and practically no others—being constantly present during the acute stages; the influenza-bacillus being but very rarely found early in the attack, and even when it is found it is not present in sufficient numbers to be considered the causative element of the infection. Indeed, influenza-bacilli are not being encountered

with any greater frequency than they have been found in normal as well as diseased respiratory mucous membranes during the past four years. Unquestionably, therefore, the present disease is not influenza.

Many cases beginning as an acute rhinitis show, especially during the first few days, the anaerobic bacillus rhinitis of Tunncliffe. This organism, however, tends to disappear by the fourth day, at which time the streptococcus pyogenes and the pneumococcus are the predominating bacteria.

So far as I have been able to determine by careful culture-methods, the streptococcus viridans is present in about 18 percent of the cases. As the disease progresses, various other bacteria appear, the staphylococcus albus, and occasionally staphylococcus aureus, usually beginning to be seen on about the fourth day of the attack. The micrococcus catarrhalis is but infrequently present. However, in all cases in which the upper bronchi are affected, I have found the micrococcus pharyngis siccus. This latter organism produces a circular, firmly adhering, dry, crinkly colony, while the micrococcus catarrhalis is more frequently found on the tonsils, especially in individuals who have been afflicted with chronic tonsillitis.

Staphylococci and the streptococcus viridans seem to be the predominating organisms in the nasal cavity during the later stages. Throat cultures universally show some member of the bacillus-Friedlander group, especially during the latter stages of the disease. While these organisms are not seen in the smears and are rarely found in the cultures after a 24-hour incubation at 37° C., they, nevertheless, are the predominating organisms in these cultures when they are allowed to remain at room-temperature for four or five days. I have rarely encountered fusiform

bacilli and spirilla in typical cases of this epidemic disease.

Some Clinical Features Observed

In this epidemic, the patients present many of the characteristic symptoms that we are inclined to consider as typical of grip. However, certain especially noteworthy manifestations have been observed among which I may name nasal hemorrhage (which I have found to occur rather frequently), and an intense conjunctival hyperemia very similar to the so-called conjunctival influenza (popularly known as pinkeye). There also frequently is a marked edema of the forehead, especially over the frontal sinus. This is a characteristic I have not observed in any previous epidemic.

The tendency to occlusion of the sinus—frontal, ethmoidal, sphenoidal—with resultant pressure-headaches or neuralgias, is another peculiarity, while especially frequent have been eustachian-tube closures, resulting in earache. Complications such as tonsillitis are less common than in preceding epidemics, the inflammation in the throat usually being peritonsillar and perilaryngeal. In very few cases, apparently, there occurred mastoiditis, brain abscess or severe purulent inflammations of the sinus. In such cases in which mastoiditis does develop, usually a hemorrhagic, not purulent, exudate forms; this indicating that the condition is due to a streptococcus, the virulence of which is such that it tends to produce a spreading, erysipeloid, nonpurulent inflammation. Cardiac and articular involvement and complications have, so far in my experience, been very rare. There is, however, a marked increase in acute lobar pneumonias, due principally to the type II pneumococcus and the pneumococcus mucosus.

Action of the Bacterins

I have used bacterins in the treatment of 146 cases during this epidemic, and the results in many of them were nothing short of marvelous. Practically all of the patients—amounting to some 63 percent—who were seen during the first twenty-four hours and who received a single dose of 1-2 Cc. of pneumococcus-combined bacterin, each Cc. of which contained 50,000,000 each of pneumococcus type I and type II, and pneumococcus mucosus; 100,000,000 of streptococcus pyogenes; 50,000,000 of streptococcus viridans; and 100,000,000 each of staphylococcus albus and aureus (making a total of 500,000,000 killed bacteria), showed marked

relief within three days; while the cure was completed in three or four days after a second injection of 1 Cc., usually given on the third or fourth day after the initial one.

A few patients seen during the later stages, that is, after the fourth day of the attack, did not respond as readily. Not one, however, unless there were surgical complications, required more than four injections, given at three- or four-day intervals.

To the average practitioner, the dose just mentioned would seem to be very massive, especially as we have taught that bacterins are not to be given in acute infections. However, I have yet to see a case of anaphylaxis or any other really dangerous condition to develop as the result of a subcutaneous injection of bacterins. A personal experience, in which I took an enormous dose, may be worth recording here.

A Personal Experience

Notwithstanding the fact that I had immunized some eighty children, of whom only four contracted the disease, I did not immunize myself, and as a result acquired the disease, a slight chill occurring on the evening of Tuesday, December 14. However, I decided to let the disease go on, in order to be in position to make a careful bacteriologic examination.

On Wednesday, December 15, I took 1-2 Cc. of pneumococcus-combined bacterins, a total of 250,000,000 killed bacteria. There was little or no general reaction, so far as I was aware. Having taken a dose at 6:00 o'clock p. m., the reaction began at 12:00 p. m. There was some slight local reaction (redness, etc.), visible for thirty-six hours. Four days later, Sunday evening, December 19, I took 1 Cc., 500,000,000 killed bacteria. Again, practically no general reaction.

On Friday morning, December 24, five days after the second injection, at 7:30 a. m., I injected into the abdominal region 1-2 Cc. of a concentrated stock pneumococcus-combined bacterin (approximately 26,000,000,000 killed organisms) and went about my work in the laboratory as usual. A slight headache (frontal) set in at about 1:00 p. m., which from then on became somewhat more severe, although at no time was it unbearable. There was observed a feeling of malaise at 2:00 p. m., and also some local reaction (swelling, tenderness, hyperemia), which gradually increased during the next eight hours. There was some prostration, most marked about 3:30 p. m., at which time standing was somewhat difficult, although I remained

at the laboratory working at my desk from then until 5 o'clock, when I went home unassisted.

Coming home, I found that I had very little appetite, but nevertheless ate a fair meal. Upon lying down, however, there came on some dyspnea, and I experienced alternating flashes of heat and cold, while, also, a moderate but not profuse perspiration set in. By 11:30 o'clock, some improvement had occurred, so much so, in fact, that I was able to assist in trimming the Christmas tree. At 1:00 a. m., I finally went to bed for the night, but was unable to sleep, this insomnia persisting until some time between 5 and 6 o'clock in the morning.

It was not until this time that a completely recumbent position was comfortable. Then followed eight hours of restful sleep, after which I arose, and after a hot bath seemed much refreshed, although I felt tired the entire day—Saturday, December 25. However, the entire reaction had passed off by next day (Sunday) to such an extent that I went out in the evening, apparently having suffered no untoward effects.

All symptoms of the infection had disappeared by Monday morning, and I went, as usual, to the laboratory. A hard day's work in the laboratory on Monday, however, being on my feet most of the time, and the edge of a laboratory-table coming in contact with the site of inoculation, resulted in another local reaction, almost as severe as the original one, but it was accompanied by only slight evidences of a general reaction.

At no time did I experience a chill, although the temperature dropped 1.8 degrees eight hours after the injection and rose 0.6 degree fourteen hours after the injection; while twenty-four hours after the injection it again was normal.

From the eighth to the tenth hour after the injection, there occurred a profuse nasal discharge of a thin, serosanguinous character, and considerable mucus was raised, as a result of constant coughing, due to bronchial irritation, a part of the symptom complex of the reaction—the sputum at first being tenacious, transparent, and colorless, except for the admixture of some dust particles from the respiratory mucous membrane; later, it became much more fluid and of a yellowish-green tinge.

Although I have given doses of staphylococci as high as 10,000,000,000, this is the largest dose of bacterins I have ever given, and I have yet to see a distinct chill follow the subcutaneous injection of bacterins, al-

though I have seen it occur as the result of an intravenous injection. This, in my case, also, was the severest reaction I have ever witnessed, and I do not think that, because it was personal, I am biased.

Concomitant Treatment

I do not wish it to be understood that the bacterins were the only treatment these patients received. In each case, a cathartic, preferably castor-oil, was given; a light, though substantial, diet, including milk or buttermilk, was ordered; locally, iodine in some form, usually caliodata, in combination with small doses of iodide of potassium.

If the headache was severe and there was little or no general reaction, 5 grains of acetanilid practically always controlled it. For the muscular soreness so characteristic of most of these cases, I prescribed macrotoad, bryonin, and rhusoid, one granule of each, every two hours until relief, although some of the patients seemed to do better on quinine, of which I gave the bisulphate, 10 grains morning and night. Acetanilid usually controlled the earache, but this was always supplemented by local treatment; adrenalin and a mild alkaline antiseptic containing menthol as a spray or, preferably, a douche, and given as warm as the patient could comfortably bear. Nasal hemorrhage always yielded to emetine hydrochloride hypodermically, and in no case was there recurrence following its use.

The patient, if possible, had to spend twenty-four or forty-eight hours in bed, in a room not over 70 degrees temperature, and in which the humidity was maintained as near the saturation-point as possible; the excessive moisture tending to liquefy secretion and allay the irritation of the respiratory mucous membranes. As many patients as possible received iron citrate, hypodermically, during convalescence, a dose being given every other day for four doses. This I believe is good practice, owing to the fact that we have infection caused by an hemolytic organ.

In no case have I seen an acute nephritis, although the urine was always carefully examined. Only two patients developed a cystitis, caused by streptococci and colon-bacilli; but this rarely lasted more than forty-eight hours. No specific treatment was given for this, aside from the large quantities of water and citrous fruits, which were ordered for all as a routine measure.

Those patients who took the hot nasal douches or inhaled the steam from a boiling

kettle in which either menthol or benzoin had been placed with the water, apparently derived the greatest amount of benefit therefrom.

Practically every patient who did not present some chronic infection of the antrums recovered completely within ten days; over 60 percent of them in five days. All those showing abnormalities of the turbinates or septum or any other anatomical lesion of the respiratory passages were immediately referred to a nose-and-throat specialist. It is a waste of time and energy to attempt to produce a permanent and lasting cure in such individuals without correcting their anatomical deformities.

In no case have I deemed it necessary to employ autogenous bacterins, as they are generally defined; however, if some other organism, such as the micrococcus pharyngis siccus or micrococcus catarrhalis or a non-

hemolytic streptococcus was found to be present in the cultures, either an autogenous made from this particular organism or a corresponding stock bacterin was added to the pneumococcus-combined bacterin.

A parallel series of cases, 12 in number, for which autogenous bacterins were prepared in each instance, did not recover any more rapidly in the hands of any of my confreres than did my patients under stock bacterins. Of course, it must be remembered that the cultures from which the pneumococcus-combined stock bacterin was prepared were, many of them, isolated from patients in this epidemic.

Children under ten years of age received one-half the adult dose. As a prophylactic I gave 250,000,000; four days later, 500,000,000; and five days later, 1,000,000,000 Pneumococcus combined.

Chronic Articular Rheumatism and Rheumatoid Arthritis

Their Causes and Treatment

By BEVERLEY ROBINSON, M. D., New York City

IN THE fifth volume of Osler and McCrae's "Modern Medicine" (1915), in the article on arthritis deformans, it is stated by Doctor McCrae, who wrote it, that "chronic rheumatism" is a misnomer; that this term should be abandoned and the designation "chronic arthritis" be substituted for it—in this way assigning no definite cause for that diseased condition of the joints, but simply stating the fact.

It is denied by that author, so far as his observation goes, that chronic rheumatism ever follows an acute attack of rheumatism (p. 897). Further, the identity of this affection is much questioned. As a term, it is misleading, and the word "rheumatism," if used at all, is only acceptable for rheumatic fever.

With this opinion of McCrae I am not in complete accord. I acknowledge freely that many joint conditions, chronic in character, have an origin entirely different from that of rheumatism. In some instances, the diagnosis is soon accurately made and the cause of the arthritis shown. In some others, however, and especially among older persons, we should still assign rheumatism as the cause of the joint disease. We may not be able precisely to determine what the efficient, primary cause has been in the individual case, but we

should not give up the name entirely for cases in which the symptoms are distinctly marked, even though the infection, if infection it be, has not as yet been absolutely determined.

Of course, if we had a thoroughly reliable touchstone in treatment, we might be greatly helped; but we have not. The nearest approximation to this, in my opinion, is, medication with salicin, in large and frequent doses. When this remedy is manifestly useful in relieving pain and in helping partly the local disablement, I incline strongly to the belief that the condition is rheumatic in nature. When, on the contrary, salicin, properly given, affords no relief, even temporary, I consider its rheumatic nature very doubtful; and usually the direct cause of the disease will be established later.

It is evident how important it becomes to treat all these rheumatic cases very early when the joints are implicated in an insidious way, as they often are. If we permit the poison—whatever it be—to get a hold in the system before it's being effectively combated, we must make up our minds that we shall not be able to obtain any thoroughly curative effect. For, already the tissues about the joints have become thickened, contracted or atrophied, and time alone, with persistence

in the use of remedial agents, especially local ones, and suitable surroundings for the general health, can bring about desirable results; that is to say, a measure of comfort and improvement. Complete cure may result in a few instances even then, if the case be taken hold of vigorously and managed carefully and fully. If it has been allowed to progress without such treatment, however, we may not hope for more than amelioration, at best.

Principles of Medical Management

As regards the medical management of chronic arthritis of the varieties now being considered, endeavor should first be made to get rid of the focus of infection so far as may be. Then we should devote ourselves to the general management of the case and also to lessen the local pain or disablement of the joints affected.

Rest, in due amount, should always be carefully considered; and whenever there is an acute exacerbation locally, as evidenced by increased pain or stiffness, and, perhaps, general malaise and some rise of temperature, it should be firmly insisted upon for one day or longer. The bed is the place for these patients, at least for a while.

A little later, massage and passive, or possibly active, movements should be associated with the complete rest in bed. Then, a little walking, with or without support of an individual or crutches or a cane, should be attempted, and the length and duration of the walk progressively increased from day to day. The amount of active movements, either with or without massage, when in bed, should depend upon the personal response or reaction of the patient. In a similar way, it should be our guide when the patient is up and around, more or less, during the day. If active movements in bed or walking around the room or out of doors notably increase pain and stiffness of the joints, and these persist rather than disappear in part after some hours of complete rest, then we should lessen the amount of these exercises for a few days.

The general nutrition should be carefully attended to, and the effort be made constantly to strengthen and improve it by every restorative measure.

Of course, an abundant supply of sunlight and fresh pure air is essential; while, above all, an air of optimism, according to Billings, should surround the patient at all times. Altogether too prone are they to become discouraged under the obstinacy of their ailment, hence, change from one medical

adviser to another is frequent, despite even the best of care and greatest tact on the part of their physician and the nurse.

Little by little, with unrelaxed efforts, improvement, generally and locally, will follow. But, on the other hand, if there is any letup of treatment in any particular, a painful relapse is liable to occur. These relapses are often very obstinate, and increasingly so.

Role of the Vaccines

Autogenous vaccines, made up from the tissues and exudates of the focus of infection, have been of value. Numerous observations by several competent and reliable observers prove it. However, the quantity employed should be moderate, at least in the beginning of this treatment, and until the special idiosyncrasy of the patient is ascertained. Otherwise, we are liable to have not a few unpleasant sequels—locally and generally. Moreover, in not a few instances, we find that we obtain quite as much success with a minimum dosage, eventually, as we do by introducing into the economy large or increasing doses.

Personally, I have but very limited faith in the curative effects of the stock vaccines; for, they impress me rather as a sort of hit-or-miss procedure, one not based upon what seems to be a rational conception of treatment. And, yet, there are now on record numerous instances, fortified by accurate reports from physicians who stand deservedly high in the profession, that point to very beneficial and enduring results at times, as obtained from the judicious and repeated use of these agents. Especially is this true of multiple vaccines containing a certain proportion of the derivative of the dead diplococcus microbe, to which Paine and Poynton have attributed such great importance in the causation of rheumatism.

Unfortunately, in many of these cases, other medical treatment has been employed at the same time, besides the vaccine, so that it is difficult to appreciate accurately to which of two agents we should ascribe the improvement in the patient's condition. On the other hand, according to the report of cases treated by Dr. A. A. Stafford,¹ this assertion does not apply; for, the good effects obtained by him were wholly due to the vaccine employed, since no other remedy was administered at the same time, except what was surely of no importance in the great amelioration of the patient effected in a very brief period.

¹*Southern California Practitioner*, Sept. 1914, p. 290.

It must be added, however, that Doctor Stafford's cases were usually acute rheumatic ones. Also, it is worthy of remark that most authorities have had better results from vaccines when employed for quite a length of time in cases of chronic arthritis of the nature of chronic rheumatism or of rheumatoid arthritis than in acute forms.

Insistence should ever be made upon the great importance of the general good management of the patient. Also, we should get rid, if possible, of a present and continuously acting source of infection and poisoning of the whole system. Without attention to, and the remedial treatment of, such focus, the vaccines, it seems to me, would only in relatively few instances have any marked beneficial effects; while, surely, these would not endure. To believe otherwise, is opposed to rational views bearing upon the judicious treatment of the diseases under consideration.

The late experiments of Dr. David John Davis,¹ of Chicago, on rabbits, designed to show the effects of sodium salicylate in various types of arthritis, do not substantiate what we know, clinically, about its action in acute articular rheumatism. They do show, however, that, as we have believed for some time, in forms of arthritis other than the rheumatic, the salicylate has very little, if any, protective or remedial value.

Chronic Articular Rheumatism and Rheumatoid Arthritis

As for rheumatoid arthritis, particularly, R. Pemberton² insists upon the value of proper diet, gradually increased, and, little by little, being approximated to about the same as we eat when in perfect health.

Whenever the causal source of the disease is found, it should be removed, if possible. In many instances, however, it cannot be discovered, and then the general line of treatment must continue. Even then we may obtain excellent results. Doctor Pemberton does not consider the disease as due to "intestinal putrefaction," and believes that a moderate proteid diet is permissible; but neither that diet nor a diet of carbohydrates should be in excess.

In general, the treatment of chronic articular rheumatism and of rheumatoid arthritis does not differ essentially. The descriptions of them given by the authors so frequently merge into one another that we might readily take either one as our guide.

In the beginning of these two diseases,

it is quite impossible to separate them. They are both very insidious. The acute exacerbations repeat themselves quite frequently, with increased local pain and swelling—and perhaps a slight rise of temperature. The symptoms are not unlike, and rapid changes of temperature and exposure to cold and damp aggravate both diseases.

At a later stage, they frequently may be differentiated and with more or less certainty, depending upon the deformity of the joints affected and the greater disablement which usually results from rheumatoid arthritis.

We never have, as we know, the bony outgrowths—the Heberden's nodes—in chronic articular rheumatism. In the latter disease, we are more likely to have a valvular cardiac affection, which may be attributable to a previous acute rheumatic febrile attack, or it may have developed little by little and without any specific assignable cause being apparent. It is true that chronic articular rheumatism is seen more frequently in hospitals than it is in private practice. It is especially found among day-laborers, cooks, policemen, stokers, individuals whose daily work exposes them frequently to wet, rain, and draughts when overheated and when tired.

Rheumatoid arthritis, in its chronic, advanced form, is more frequently encountered among the well-to-do and those who are often people of very moderate habits. Indeed, it is a mistake to assume that it is in any way an evidence of high living or over-indulgence in rich food or wines. There is one exception which should be noted in regard to the causation of these diseases. Among women who have had several children, who have been burdened with household cares and those who suffer from uterine disturbances, rheumatoid arthritis may be found equally among the poor and the rich.

Rational Treatment

From the preceding observations, we should derive our best indications for rational treatment.

No form of dieting that is too careful or particular is, as a rule, advisable. No cutting off absolutely from all alcoholic stimulants is, I believe, desirable. The idea that chronic articular rheumatism or rheumatoid arthritis is improved by great abstemiousness in food or drink is not infrequently a great error in practice.

To be successful, such patients need building up in every way possible. This does not mean, of course, that their digestive processes

¹*Archives of Internal Medicine*, April, 1915, p. 555.

²*Amer. Jour. Med. Sci.*, March, 1914.

should be overtaxed, nor does it mean that, when a patient has a distaste for any particular food or drink, this food or drink should be insisted upon because of some probably false theory that has been utilized to further wrong judgment. Personal idiosyncrasy must always be allowed for.

In addition, it should be noticed that people's constitutions change, in a measure, from year to year and without our being able to explain why it is so. I have known, for example, those who found sweets very grateful to the palate during months and years, almost suddenly and apparently with nothing to account for the change, to acquire a thorough distaste for them.

Today, we are all inclined to seek for some distinct focus in the throat, nose, mouth, ears, appendix, and so on, as the direct efficient cause of an outbreak or aggravation of chronic rheumatism or rheumatoid arthritis, and to this and to the getting rid of it effectively, if possible, I have already referred more than once.

As to Dyscrasias

On the other hand, however, we should recognize now, that there is such a thing as an arthritic diathesis, and it is clearly distinguishable in some individuals and in some families. When such a constitutional dyscrasia exists, a mere nothing—the slightest change in one's habits or surroundings, or a very moderate exposure to chill, dampness, rain—will bring on a relatively acute attack or, surely, increase for a time the local stiffness and disablement of the joints. All patients having chronic articular troubles of this sort are better off, as a rule, in a moderately warm, dry, inland location than they are when the contrary surrounding conditions prevail.

For this reason, individuals living in Boston, or in New York particularly, should remove in the late autumn or in winter and early spring to localities like the pine belts of South Carolina and Georgia. During summer, they are nowhere so well off as near sulphur springs, like Sharon or Richfield Springs, New York, or the White Sulphur Springs of West Virginia.

Local Treatments

In the way of local treatment, there is nothing that equals daily massage combined with passive and active movements. But, too much emphasis cannot be placed upon the importance of the proper selection of a skilled, judicious masseur or masseuse. Moreover, the massage and passive and active move-

ments should be practiced systematically, and daily at least for several days or weeks. Later, the intervals of this treatment may be lengthened. This is true particularly as soon as the patient is able to walk a short distance without aid.

If too much or too severe manipulation of the joints be employed, quite as great harm can be done, even in a brief period, as would result from prolonged inactivity; and, as a result, we have greater stiffness and disability of the joints.

The best masseurs very rarely use any emollient or stimulating application, but depend entirely upon the use of their bare hands. In some instances, however, I am quite confident that massage with a combined stimulating and soothing liniment, such as compound soap liniment or Stokes's liniment, has helped to allay pains and to increase the pliability of the joints. At present, I am inclined to vaunt highly the decided and satisfactory results obtained from the frequent use of mutton suet, slightly benzoated, to neutralize its unpleasant odor. It should be kept in mind always, in making use frequently of liniments which cause redness or local irritation, that we are thus deprived of the application of massage treatment for the while. This is the reason why I have given up, in chronic affections of the joints, the local use of oil of turpentine, oil of gaultheria, menthol, ammonia, and chloroform.

Occasionally employed, and especially if there be an acute attack and massage is not desirable on account of the increased pain occasioned by it (usually because of ignorance on the part of the manutherapist), stimulating liniments may relieve pain in the joints for a while. This is true simply when they are applied locally on lint or gauze and evaporation is prevented by, say, a covering of oilsilk or thin rubber tissue.

What applies to liniments may also be stated with regard to repeated local applications of tincture of iodine to the joints. It may soon, when applied frequently, cause considerable local irritation of the skin. Pursued excessively, or if a strong tincture is used, we may produce blistering. So may we get blistering from oil of turpentine, if evaporation is prevented by an impermeable covering.

Now and then blistering is desirable, particularly where massage treatment cannot be had. If this method of treatment be employed, we should, preferably, recur to the old-fashioned treatment of a succession of

small fly-blisters near and around the joint, not immediately over it. Sprinkling the blister-plaster with spirit of camphor before applying and allowing the alcohol to evaporate will prevent the cantharides from irritating the urinary organs.

The compound tincture of iodine and the iodine-ointment are now and then preferable to the simple tincture of iodine. They contain a proportionately smaller amount of iodine; and the iodide of potassium in the former, in considerable amount, and the lard in the latter, promote the resolvent effects. Moreover, they can be applied more frequently without causing undue irritation—the ointment with gentle rubbing. With the late Doctor Sayre, of New York—so famous as an orthopedic surgeon—iodine ointment was a favorite and often employed by him.

These facts, no doubt, are familiar knowledge to many. Nevertheless, as they are all-important for success in treatment, they should be insisted upon for inexperienced practitioners.

Special Treatments

Massage, as described, may often be associated, with very great advantage, with the use of one or other form of electricity. Whenever pain in the joints has been notably increased by massage or forced stretching of the ligaments or of muscles around or near the joints, this can be rapidly suppressed by the use of the faradic current.

In some instances, there is great benefit to be derived from the use of superheated dry air; but, unfortunately, outside of large cities it is very difficult to obtain proper facilities for its use. Moreover, even in a city, as in New York, where very excellent apparatus and skilled attendance can be had, it involves treatment outside of one's house. Of course, there may be a few rare exceptions, where an installation has been made in the home, but this can only be attained with much expense for apparatus and skilled treatment.

The radiant electrical-light and heat treatment has in its favor the relative ease, as compared with the ordinary treatment with superheated dry air, of its adoption wherever there may be found a sufficient electrical plant.

The Use of Radium

The last expression of science in these cases is, the employment of radium-therapy internally, by intravenous or intramuscular injection of solutions of radium. To what

degree, if any, such treatment can have any curative effect upon the primary cause of the disease is as yet unknown. The great influence of radioactive substances supposed to be existent in certain mineral-spring waters, and which seemingly would explain their beneficial local action, is even at present a matter which may be questioned. To the use of these waters in baths or taken internally, may also be attributed a marked beneficial effect upon the constituents of the blood or upon the functions of the blood-forming organs.

In all these cases, I have learned to have great faith in drugs, notably in the glycerophosphates or hypophosphites of lime and soda and in Blaud's pill mass in powder form. As an immense aid to nutrition in some of these instances, nothing equals or takes the place of good codliver-oil. It may be taken plain, mixed with malt extract, or combined with the hypophosphites, as best suits the individual. No amount of good cream or butter will supply its deficiency.

I do not believe much in the utility of iodide of potassium, given internally. It is very prone to upset the stomach, and its helpful effects, so far as the joints are concerned, are not evident, as a rule. If the iodides be given at all, I much prefer the syrup of hydriodic acid to any other form, on account of its effectiveness and assimilability.

In these and the foregoing statements, I have tried to formulate certain rules that are essential to success. When all these means have been tried with only very partial improvement, we may, in a few instances, obtain unexpected good results, occasionally, from mechanical apparatus or from operative surgery. But, we cannot urge too strongly the great need in just such cases of being ultraconservative. From mud- or peat-baths or salt-baths, I have sometimes had pleasant, if not enduring, effects.¹

The clothing must always be carefully attended to, and wool or silk undergarments are a necessity. Sleeping between blankets is often grateful and desirable. To those who suffer from cold feet at night, long wool or cotton-flannel socks or leggings are a great comfort during the cold months of the year.

This article is suggestive rather than exhaustive, and, as the record of personal experience, I trust may be acceptable to many.

¹The best artificial baths are Pennes' baths, much used abroad.

The Prostate Gland: Its Diseases and Disorders

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EDITORIAL NOTE.—This is the second of the series of papers upon diseases of the prostate gland promised us by Doctor Robinson. It will be continued for several months. Our readers have a treat in store for them.

Loss of Libido

CASE 7. It is remarkable how, apparently, the same pathologic condition may produce diametrically opposite results. In one of the cases, previously described, we have seen how irritation of the prostate gland may produce excessive libido. The latter may be fictitious or artificial, but it is there, and the patient's actions are, to all intents and purposes, the same as if he suffered from a genuine powerful libido. Just so we may have diminished libido or even complete loss of libido from an abnormal prostate gland. This diminished libido may follow and be the result of a previously existing and excessive libido. As we know, all hyperfunctioning is usually followed by hypo-functioning, and it stands to reason that excessive libido, when it leads to excessive sexual indulgence, may result in a lack of libido. However, in some cases, this lack of libido seems to be independent of any previous excessive libido; it is apparently the direct result of an irritable or pathologic process.

Before we go any further, it will be well to ask the reader to bear in mind that by "libido" we merely mean desire for sexual intercourse, and not sexual power. There is a good deal of confusion in the mind of the average physician regarding the various phases of the sexual act, and the words "libido," as well as "sexual impotence," are used in a rather confusing, vague manner.

Several elements are necessary, in the male, for the proper and satisfactory performance of the sexual function. First, libido. There must be a strong or at least fairly strong desire for the opposite sex. Second, erection. For the proper performance of the act, normal erection is necessary; and not only must the erection be of a certain degree, but it must not be too slow in coming, while it must last a certain length of time. Third, ejaculation. The ejaculation must not be premature, otherwise there is little satisfac-

tion to the man and still less satisfaction to the woman. Fourth, voluptuousness. There must be a certain pleasurable sensation, which varies in different individuals, during the act of ejaculation, the acme of the act, which we call the orgasm. There is still another feature, fertility. The semen must be capable of impregnating the ovum; but this does not belong to the sexual act proper. Interference with any of the four elements enumerated above renders the act unsatisfactory, and, if the second and third element are abnormal, sexual impotence of various degrees is the result.

Ordinarily speaking, then, we apply the term "sexual impotence" to weak erections or to complete lack of erections, and to premature ejaculation. The lack of the first and fourth factors, that is, lack of libido or lack of voluptuousness, or pleasurable sensation during the orgasm, by interfering with the act makes the act unsatisfactory, but does not constitute impotence.

We have seen before that a diseased prostate gland may produce premature ejaculations and increased libido, and in the case which we are about to report briefly we shall touch upon diminished libido as a result of an abnormal prostate gland.

A. A., age thirty-four, married six years, had gonorrhea fifteen years ago, of which he was completely cured. The urine was free from the slightest traces of shreds or mucus, in fact, it was crystal-clear. The urethral mucous membrane was perfectly normal, and the fact that he had been married six years, indulging in normal sexual relations without any harm resulting to his wife, as well as that he had two perfectly healthy children, is pretty positive proof that his statement, that he was completely cured of his gonorrhea, is correct. Up to six months ago, he had absolutely nothing to complain of. Then he became conscious that his libido was becoming diminished rather suddenly, that he could go for a month without experiencing

any desire, and that, when he did indulge, there was no pleasure in the act, although the ejaculation was not premature.

An examination revealed an enlarged, very sensitive prostate gland, excruciatingly sensitive in some spots. Gentle massage of the gland, with no other treatment whatever, brought about a normal condition in less than three months. He is now in as normal condition as he ever was.

Tremor of Hands

Case 8. This patient presented tremor of the hands, which was beginning to become more marked during the past three months. As he was doing a great deal of writing, being engaged in newspaper-work, that was considered to be the etiologic factor; but, reducing the writing to a minimum and giving up writing altogether for three weeks did not effect any improvement in his condition. He was also quite a smoker and another doctor considered this use of tobacco the etiological cause. The man could not give up smoking altogether, still, he reduced his daily amount to about one-third of what he used to smoke, without there following any improvement in his condition. He was also given hyoscine hydrobromide, in doses of 1-150 grain, gradually increased to 1-100 and then to 1-60 of a grain, but without experiencing any benefit. Also, he was indulging excessively in sexual intercourse, and then that was considered the etiological factor. It is possible that the latter was the primary factor; still, giving up sexual indulgence altogether did not produce any appreciable improvement.

Finally, an examination disclosed an enormously enlarged prostate gland, which was very sensitive. Massage plus rectal irrigations with a cold saline solution and instillations of silver nitrate into the posterior urethra brought about a complete cure. I might add that bromides given in rather large doses did not prove of the slightest value.

Cephalalgia

Case 9. This patient, a man of fifty-five, complained of severe headaches following sexual intercourse or straining at stool, which latter was always followed by a discharge of some prostatic fluid. While the headache following defecation lasted only an hour or so, the headache following intercourse would last, sometimes, twenty-four or even forty-eight hours. Complete abstinence for three months, during which time the prostate gland was massaged twice a week, resulted in complete cure of the condition; and it has not

returned in two years. The patient had taken every coal-tar product on the market and every headache remedy prescribed by the ethical physician or advertised in the newspapers. Nobody took the trouble to examine his prostate.

The difference between one physician and another is really not so much a difference in knowledge as a difference in the care with which the etiology is elicited and the examination made. If physicians were only more careful to get the history of their cases, and if they spent more time in arriving at a diagnosis, they would not so often need to send their patient to a specialist.

Constipation

Case 10. It is not necessary to report one specific case, for, instead of one case, I could report hundreds of cases. Constipation as a result of an abnormal prostate gland, is a very common affection. Consciously or unconsciously the patient afflicted with a sensitive or enlarged prostate gland often refrains from emptying his bowels when he should, and the result of failing to attend to the calls of nature is constipation; then, if this patient suffered from constipation before, that constipation will be intensified and become more and more obstinate. It is not at all claimed that an abnormal prostate gland is one of the most frequent causes of constipation; nevertheless, it is frequent enough to be borne in mind in all obstinate cases, particularly when defecation is accompanied by straining.

In this connection, it should be borne in mind that in constipation in which an abnormal prostate gland is apparently one of the factors, all irritating cathartics, such as aloin, podophyllin, colocynth, and the like, are contraindicated, because they congest and irritate the lower bowel and also congest and irritate the prostate gland. Nor is phenolphthalein a very commendable cathartic. It does irritate the lower bowel, and, if repeated too frequently, it also irritates the kidneys. Among the best laxatives in such conditions is one that possesses merely lubricating properties, and the best substance for this purpose is a heavy mineral oil (liquid petrolatum).

To emphasize: In all cases of obstinate constipation in men, the prostate gland should be examined and, if found enlarged, congested or supersensitive, should be treated.

Irritability

Case 11. Just plain, simple irritability. I know of no condition, except cardiac disease

which is so liable to cause irritability, crankiness or anger and dissatisfaction with everybody around as is a diseased prostate gland. Very many cases of irritability that are often ascribed to dyspepsia can, with more justice, be ascribed to some trouble in the prostate gland, and it is remarkable how a man who is a nuisance to himself, to his family, to his friends, to his customers, in short, to everybody around, may become perfectly amiable and easy to get along with if his abnormal prostate gland has been successfully treated and brought to a normal condition.

Sterility From Prostatic Disease

Case 12. That a diseased prostate gland may affect the libido, the power of erection, and the ejaculation, is well known, and we have referred to it in some of the cases described above. It is not so well known, however, that an abnormal prostate gland may in itself cause sterility. The following case is very instructive:

B. B., age thirty-four, married eight years, but his wife never was pregnant. The wife was at first subjected to some treatment, but the husband had the decency to confess that he thought that the fault probably was his. He had had two or three attacks of gonorrhea before his marriage, and, in one of the attacks he had a severe epididymitis. When he gave this history, the doctors who treated him thought they did not have to go any further. The diagnosis was sterility due to gonorrheal epididymitis. Thereupon, there were prescribed for him hot baths, massage of the testicles (with and without ointments), and a lot of other things.

When the man came to me for examination, the first thing I ordered him to do was to bring some of his semen in a condom, and, to my great surprise, microscopical examination of this revealed numerous spermatozoa. Consequently, the sterility was not due to an occlusion of the lumina of the vasa deferentia. However, the spermatozoa were not motile or only very slightly so. An examination of the prostate gland and of the seminal vesicles instituted next revealed as considerable amount of mucopurulent secretion—and pus in the prostate gland and in the seminal vesicles naturally is capable of destroying or at least impairing the vitality of the spermatozoa.

Treatment was directed to the prostate gland and the seminal vesicles, and was continued until the secretion from both failed to show any pus and both organs became practically normal. Examination of

the semen undertaken at that time showed the spermatozoa normal in amount and of normal motility. Soon thereafter impregnation of the wife followed; but, for some reason, this first pregnancy resulted in a miscarriage at about three months. The second pregnancy, however, was perfectly normal and a perfectly normal boy was the result.

Frequent Urination

Case 13. The case I am about to mention once more illustrates the frequent and regrettable failure of many doctors to apply all the means at their disposal for a diagnosis.

This man complained of frequent urination during the day—every hour, sometimes every half hour—and of having to get up at night two or three times. While there was no pain, there was a certain disagreeable sensation, and even after urinating the bladder felt as if there were some urine in it; it never felt quite empty. The physician looked at the urine and, despite the fact that the urine was quite clear, he, without further examination, diagnosed cystitis and prescribed an alkaline diuretic mixture. The condition became only the worse, for the man had to urinate more often.

An examination showed that the prostate was greatly enlarged, congested, and quite painful. The man recollected that some two months previously he was sitting on a cold stone stoop and that the frequent urination had begun the following day. Treatment directed exclusively to the prostate gland improved the condition at once and brought about a cure in two or three weeks.

Hemospermia

Case 14. This patient became badly frightened, because he had observed that his semen was tinged with red as if it contained blood. While hemospermia is more generally due to inflamed seminal vesicles, it may also result from a badly congested prostate gland. This was the case in this instance. Rest, codeine suppositories, followed afterward by gentle massage, resulted in a cure.

Heat and Heaviness in the Legs

Case 15. When a man complains of the calves of his legs feeling hot and heavy, particularly in the afternoon, the prostate gland should, invariably, be examined, and in many instances this will be found to be the cause. Here also I will not refer to any case in particular, because I have treated hundreds of cases in which the patients had been rubbed and massaged and were even ordered to wear rubber stockings, but

all to no avail, but who were benefited at once by proper treatment of the prostate gland. It is remarkable how a diseased prostate gland will send radiations in all directions, up and down, not only affecting the body, but the psyche of the individual as well.

Injury From Improper Treatment of the Prostate Gland

Case 16. The case, or class of cases, to which I wish to refer here really does not belong to the category of diseases of the prostate gland, but nevertheless, must be mentioned; for, just as a diseased prostate gland will cause trouble, so a trauma of the same organ, when produced by improper or too violent prostatic massage, may be the cause of very great suffering.

Prostatic massage is one of our most valuable therapeutic measures; in the treatment of prostatic troubles it occupies the foremost place. Yet, like all other therapeutic measures, it must be applied judiciously, gently, and properly. If done brutally or violently, or when the gland is acutely inflamed, it is liable to do, and often does, an enormous amount of damage.

From the descriptions of patients who were subjected to prostatic massage by other physicians, I find that only too frequently massage is performed too forcibly, too vio-

lently, with the nails or tips of the finger^s digging into the prostate gland. This must never be done—there must be only a flat stroking and pressing of the prostate gland, but no digging into it. I have seen a number of cases where the condition became immediately worse after prostatic massage, resulting in painful urination, in strangury, in slight hematuria, in severe dragging-down sensations, in pain in the legs, and, in some instances, in complete urinary retention lasting from sixteen to twenty hours.

It is well, therefore, to call attention at the very outset to the fact that prostatic massage is not an indifferent measure, and, while of extreme benefit if performed properly and where indicated, may cause great damage if performed improperly, too violently, at too frequent intervals, or when not indicated at all, as, for instance, in the acute stage of prostatitis.

There are, unfortunately, no short cuts to the treatment of any diseases. We must always exercise great judgment and discrimination, and particularly so in the treatment of genitourinary and sexual disorders.

Having given a few examples of disorders of prostatic origin, we shall, in the next article, begin with a systematic study of *The Prostate Gland: Its Diseases and Disorders*.

The Optimist—Does This Mean You?

By MILTON RUGGLES

Full-gifted with power to see and understand,
Product of ambition, noblest of the land,
Believing in the future—in the present, too—
This is the optimist—does this mean you?

Pure-hearted, with strength to fight and win,
Guided by a purpose—not what might have been,
Aiming at the greatest, nothing less will do—
This is the optimist—does this mean you?

Unmindful of the failures, looking straight ahead,
Outliving disappointment—profiting instead,
Rising above discouragement, beginning life anew,
This is the optimist—does this mean you?

Vaccine and Serum Therapy in Everyday Practice

I. Theory and Rationale of Vaccine Therapy

By W. C. WOLVERTON, M. D., Linton, North Dakota

EDITORIAL NOTE.—Many physicians have asked that somebody write for "Clinical Medicine" a series of articles on vaccine (or bacterin) therapy, beginning at the bottom and explaining all the details. This is "it." Doctor Wolverton is an exceedingly busy general practitioner, and he writes with the problems of his own class plainly in his mind's eye. For this and many other good reasons I am sure you will like his articles.

FROM conversation with a large number of physicians with whom the writer is personally acquainted, as well as from reading many papers written by honest and well-meaning, but insufficiently informed, men, it seems to me that there exists much misapprehension concerning the bacterial vaccines and an unwarranted fear of possible deleterious action from their use.

The subjects of infection and of immunity are, admittedly, complicated, and it requires quite a large, highly technical vocabulary in order that one may intelligently peruse the literature amassed along these lines. The man on the firing line, however, has not the time to go so fully into the technicalities of the subject; and many of the men who were graduated before modern bacteriology was made a part of the curriculum of medical schools are dismayed at the complexity of the subject and dismiss the use of bacterial therapy with the well-known remark about the impossibility of teaching an old dog new tricks.

In the same way, many men hesitated about beginning to utilize the active principles of vegetable remedial agents, after having for so many years employed the galenical preparations; however, once they made a start along the new and eminently more satisfactory lines, they never turned back. And so with the new biological therapeutic agents; let an intelligent physician employ them rationally in a few properly selected cases, and he finds that he has added a set of new keen weapons to his therapeutic armamentarium.

I have made almost daily use of the bacterial vaccines, in a large general practice, for the past five years, and can truthfully say that, when I have administered them in accordance with therapeutic and bacteriologic indications and in conjunction with the proper active principles of drugs, the vaccines have seldom failed to give splendid results.

It is because of this thorough tryout of the vaccines in an extensive *general practice*

and because I do not regard the vaccines as a cureall, but rather as a therapeutic adjunct of great value when properly employed simultaneously with active medicinal agents, that I have been requested to write a series of papers, of which this is the first, dealing with the various phases of vaccine- and serum-therapy as it appeals to the *general practitioner*. And, since—as a matter of course—the general practitioners make up the great bulk of the medical profession, I shall endeavor to present the subject in as practical a form and as free from unnecessarily technical terms as possible.

Vaccines, Bacterins, Serums

Now, to begin with, the bacterial vaccines are, in the strict and proper meaning of the term vaccine, not vaccines at all. Vaccines proper are living pathogenic microorganisms the virulence of which for human beings has been attenuated in some one of a number of ways. Probably the best example of a true vaccine is seen in that which is employed to produce an immunity against smallpox. Then there was the notorious tubercle-vaccine, which was known as "Friedmann's serum," but which evidently was a true vaccine, as it was said to consist of a suspension of living tubercle-bacilli, the virulence of which for the human patient had been attenuated by their previously having been inoculated into a turtle. Still another true vaccine is that used in veterinary practice for the production of an active immunity against the disease known as blackleg.

As now generally understood, the "*bacterial vaccines*" are suspensions of *killed* pathogenic bacteria in sterile physiologic salt solution, to which usually is added a small percentage of phenol or trikresol as a preservative and to prevent contamination from without the container. A better name than vaccines for these preparations is *bacterins*, and this term will be adhered to in these papers.

An *immune serum*, or, as it is usually simply termed, a serum, is the blood-serum of an animal whose resistance against infection by

a given variety of pathogenic bacterium has been raised to as high a level as possible by subcutaneous or intravenous injections of dead or of living bacteria of the given variety, or of their toxins. These sera are commonly spoken of as "antitoxins," although they usually contain a number of antibodies other than antitoxin. The best-known examples of immune sera are those employed against diphtheria and tetanus.

One could not reasonably take up the study of the subject before us without saying at least a few words on the subject of *immunity*, by which we mean the specific resistance of an animal organism against invasion by pathogenic microorganisms (to all intents and purposes, bacteria).

Immunity

In the mind of the physician who observes while he works, there will, at times, arise the query, "Why is it that one individual as an infant contracts styes and eczema; as a child is subject to repeated attacks of furunculosis and paronychia; during adolescence, to severe acne; and, as an adult, to chronic eczema, pus infections of the tear-sac, and the like? Whereas, on the other hand, another individual is practically immune, throughout a long life, to all infections by the staphylococci?" The tissues of the former person appear to furnish an agreeable soil for the growth of the staphylococci, while those of the latter are totally unsuited to the microbic wants; but, as to the real, basic cause of this difference in immunity we are ignorant.

Now, the immunity of an organism may be either of the *active* or of the *passive* type.

Active immunity may be brought about (a) by the introduction into the animal organism of living pathogenic bacteria of a proper degree of virulence and in sufficient numbers to produce the pathologic phenomena that are designated as infection; following recovery from this infection (if the subject survive), there usually exists an immunity against a second attack of the same disease, said immunity persisting for a variable period of time; or (b) by inoculation, into healthy tissue, with *killed* pathogenic bacteria (bacterins, or bacterial vaccines). The latter method certainly is by far the more desirable, as no disease is produced thereby.

Passive immunity is of but short duration, and is brought about (in so far as it concerns the subject with which we are now dealing) by the injection (subcutaneous, intramuscular,

intravenous, subdural, and the like), of immune sera obtained from immunized animals.

The sera, since they produce only a transitory, *passive* immunity, have, of necessity, a very restricted use; while the bacterins, producing, as they do, a much more protracted, *active* immunity, have a much wider field of usefulness.

In short, we inject into a patient a bacterin, in order to create an *active* immunity; that is, we persuade him to produce his own antitoxin and other immune- or anti-bodies; the *sera* (or serums) we inject for the purpose of producing a quick, *passive* immunity.

The former—that is, the bacterins—are employed when it is safe to wait anywhere from a few hours to a number of days for their specific action to take place, as in the treatment of all chronic and also of various acute infections. The sera, on the other hand, are made use of whenever quick action is imperative, as in the case of diphtheria, tetanus, and cerebrospinal meningitis. Unfortunately, the really valuable sera, for all practical purposes, are limited to those last mentioned; the antistreptococcic and other sera frequently giving disappointing results or, in some instances, even being a menace to the patient's life—for reasons that will presently be explained.

Bacterin and Serum Are Not Synonymous

We should be careful not to confuse the terms serum on the one hand, and bacterin or vaccine, on the other. I have tried to make clear the difference between the two; and, certainly, the difference is sufficiently great. And, yet, I have often heard medical men—men otherwise well informed—speaking, in medical-society meetings, of, say, typhoid—"serum" when they meant typhoid—"bacterin." Typhoid-serum has, practically, never been employed in this country, and but little in Europe. If a man does not know the difference between a bacterin and a serum, can he reasonably be expected to obtain satisfactory results from the administration of either of them?

Returning to the matter of immunity, this may be either local or general. A few years ago, I saw the following, to me, at that time, remarkable sequence of cases in the same family; although now, in the light of recent bacteriologic discoveries, the whole matter seems clear enough.

Mrs. F., a woman of about 40 years, had a very severe attack of facial erysipelas (which we now know is caused by the strepto-

coccus of Fehleisen). Her nephew, Karl M., a young carpenter, who was staying at the same house, scratched his arm on a nail; there developed a severe attack of streptococcus septicemia. The little daughter of Mrs. F. soon had the now familiar sequence of tonsillitis, acute rheumatic arthritis, endocarditis, and chorea. And, finally, John M., a son-in-law of Mrs. F., had an attack of fulminating appendicitis, with gangrene of the appendix and some two feet of adjacent intestine, resulting in the death of the young man. All these people were living under the same roof, and in each there occurred a severe streptococcus infection, although different organs or tissues were attacked respectively in each one.

In another case which came under my care about three years ago, a young lady was suffering from acute follicular tonsillitis. Just as the throat inflammation was beginning to subside, acute appendicitis set in and demanded prompt operation. Here, the susceptibility of lymphoid tissue to infection by the streptococcus is well illustrated, it being well known that the tonsil and the appendix are histologically quite similar.

So, a patient who has sustained an attack of lobar pneumonia may thereafter be practically immune against subsequent attacks of pneumonia, but later suffer greatly from pneumococcus infections of the nasopharynx, middle ear, and the like.

As for myself, I had a very severe attack of acute rheumatic arthritis, at the age of 16 years. Since then, I have never had a similar attack; but, until I had my tonsils removed, I would have an attack of tonsillitis every time I attended a case of acute arthritis. Presumably, incomplete immunity on my part.

In the study of immunity, the attention of the investigators has been centered almost wholly upon the blood, to the exclusion of the subcutaneous and muscular tissues. This would appear to be all wrong, as the same blood supplies the skin, subcutaneous tissues, joint-structures, nasopharyngeal mucosa, pulmonary tissues, appendix, and other tissues. Yet, what a diversity of location of the tissue whose resistance to infection is below par, as has been detailed in the examples given in the paragraphs immediately preceding. This would point to some intrinsic variation in the cellular chemistry of the various tissues, which makes one tissue or organ a favorable breeding-ground for some specific microorganism, while another part of the same person's body is entirely immune to it,

for the time being, at least. Discoveries may yet be made in cellular chemistry which will aid us materially in our endeavors to confer immunity against bacterial invasion (infection.)

Various Forms of Immunity

Immunity may be complete or only partial. Man is naturally completely immune to hog-cholera. On the other hand, the higher apes, while never naturally infected with syphilis, may, under certain conditions, be inoculated experimentally with this disease. Again, one attack of any of the acute exanthemata, as scarlet fever, measles, and the like, usually confers complete immunity upon the individual for the remainder of his days; however, in a small proportion of persons, this immunity may be only partial, so that a second attack may be sustained.

Also, immunity may be either natural or acquired. Allen¹ defines *natural immunity* as "the resisting power inherent in an individual, independent of influences from without"; while "*acquired immunity* is the resisting power gained by an individual in consequence of influences from without."

Natural immunity is generally characteristic of all the members of a given species. Thus, for example, man is naturally immune against the organisms of hog- and of chicken-cholera; again, the lower animals generally, against the gonococcus.

In *acquired immunity*, the protection is generally the result of the processes whereby recovery is brought about in an individual against invasion by that particular microbic agent against which the immunity has been acquired; for example, typhoid fever, diphtheria, varicella, variola, measles, pertussis.

However, acquired immunity may be conferred in other ways than by accidental infection. Immunity may be *passively* acquired by the administration of serum, or antitoxin. An *active* immunity may be acquired (a) by inoculation with an "attenuated virus"—cowpox, or vaccinia for example; also, in the bovine species, by blackleg-vaccine; (b) by the subcutaneous injection of a killed culture (bacterin) of the specific pathogenic bacterium against which immunity is desired.

We may say that recovery from all infectious diseases is owing to the acquirement of an immunity; and this may be partial or complete, local or general.

It would appear, from the investigations of many workers, that the acquiring of this

¹Allen: "Vaccine Therapy and Opsonic Treatment". 4th ed., p. 4.

immunity depends, in great measure, at least, upon the elaboration within the tissues of various substances having a deleterious action upon the bacteria and the products of their activities. These immunity-conferring substances have been given the general name of immune substances or antibodies. Some of these appear to be products of normal tissue activities and, therefore, always to be present in greater or less amounts ("non-specific antibodies"); others are of service only against that particular species of bacterium in response to the entrance of which they have been elaborated ("specific antibodies").

Nature of Bacteria and Their Toxic Products

Before defining the various antibodies, it may be well to consider for a moment the nature of bacteria and their toxins. To the lay mind, bacteria is a synonym for microscopic "bugs," or animalcules; while, to the average medical man, they represent the lowest order of vegetable life—microscopic, unicellular plants.

Although this latter view is correct, so far as it goes, the matter is not as simple as it may seem at first glance. The protoplasmic bodies of pathogenic bacteria contain a large percentage of proteinic (albuminous) material, which is highly toxic to the animal economy. Then, too, bacteria, as a result of their metabolic activities, produce, among other chemical substances, *toxins*. Toxins, again, may be elaborated and retained within the bacterial cell ("endotoxins"); or they may be set free into the surrounding medium ("exotoxins"). The exotoxins show a selective affinity for some particular tissue. Thus, diphtheria- and the tetanus-bacilli are the most conspicuous examples of bacteria producing exotoxins that have a selective affinity for nerve-tissue. It may be remarked, in passing, that about the only antitoxic sera which have proven of signal value in the treatment of infections are those prepared against these two diseases, diphtheria and tetanus, the causative agents of both of which produce exotoxins.

In marked contrast to the foregoing exotoxin producers, are the members of the streptococcus group of pathogenic bacteria, which produce only endotoxins. The anti-streptococcic serum is antibacterial, causing a destruction (bacteriolysis) of the bacterial cell, with consequent setting free of the contained endotoxins. Sometimes, when the patient is already giving evidence of extreme toxemia, the administration of a large dose of antistreptococcic serum may cause such

wholesale destruction of the streptococci that the human organism is completely surcharged with the additional flood of liberated endotoxin, and the exodus of the patient be thereby hastened rather than retarded.

By whatever method an immunity may be brought about, it is in response to the introduction into the human tissues of a sufficient number of bacteria, with their contained toxic proteins and specific endotoxins, and their subsequent production of exotoxins. The presence of these toxic substances acts as a stimulus to the formation of immune substances or antibodies by the leukocytes (probably chiefly the large mononuclear and polymorphonuclear varieties) and the fixed connective-tissue cells.

Antibodies Defined and Described

These immune substances, or antibodies, are of various kinds, possessing different roles. In our present study, we shall consider only those a working-knowledge of which appears to be indispensable to a proper understanding of the rationale of serum- and bacterin-therapy. These substances are known, respectively, as "antitoxins," "agglutinins," "lysins," and "opsonins."

Antitoxins are complex chemical substances elaborated within the animal organism (the human body), in response to the presence of bacterial toxin, with which latter substance they combine, the effect being, to neutralize the poisonous properties of the toxin. Antitoxins doubtless are specific; that is, the antitoxin formed in the body to neutralize diphtheria-toxin would have no appreciable effect upon the toxin of tetanus, and conversely.

Agglutinins are substances formed within the body which, when brought in contact with pathogenic bacteria, cause an "agglutination," clumping or massing together of the bacteria. Agglutinins are not so nearly specific in their action as are antitoxins, in that an agglutinin formed as the result of invasion by one variety of pathogenic bacterium often will cause the agglutination of a closely related group of organisms. For example, a blood-serum that will cause the clumping of typhoid-bacilli often will produce a similar agglutination of the various paratyphoid bacilli.

This latter phenomenon seems rather suggestive of the probability of the "pleomorphism" or "mutation" of one so-called "species" of disease-germ into another, especially in the light of results of experimental work recently carried out by Rosenow (of which more later).

Agglutinins are made use of in a diagnostic way, as well as in the treatment of disease. This is best illustrated by the well-known Widal test for typhoid-fever, in which the patient's blood-serum is mixed with a living or a killed culture of typhoid-bacilli, and then the ensuing reaction is noted. If the patient is the victim of, or has been immunized against typhoid, his serum contains agglutinins specific against the bacilli, even early in the disease, before the clinical symptoms have become surely diagnostic of the condition.

As the result of the presence of this specific typhoid agglutinin, the bacilli in the test soon begin to clump together in masses, this phenomenon being visible, not alone with the aid of the microscope, but to the unaided eye as well. And not only does this specific reaction take place when a living culture of the typhoid bacilli is employed, but also when killed bacilli are thus used—except those killed by heat.

Wright² has done an immense amount of research-work, along the line of specific agglutination tests, for the diagnosis of various infectious diseases. In fact, it was while working out specific agglutination tests for the differential diagnosis of Malta, typhoid, malarial, and other fevers affecting the British soldiers quartered along the Mediterranean that he hit upon the idea of employing killed cultures of pathogenic bacteria (bacterins) in the treatment of infectious diseases. We shall have occasion many times in these papers to refer to the work of Wright; indeed, it would be impossible to write any paper upon the subject of bacterin-therapy without doing so, for reasons which will soon become obvious.

Lysins, or, more particularly, bacteriolysins, have the property of destroying the bacterial cell, that is, of causing its disintegration. Reference to this action of anti-streptococcic serum was made when considering endotoxins. Antistreptococcic serum is perhaps the best example that could be given of a serum containing chiefly bacteriolysins as the immune substance, or antibody.

Opsonins (from the Greek word "opsono," meaning, "I cater," or, "I prepare for eating") are substances, elaborated within the animal body, which have a sensitizing action upon the invading bacteria; that is, the opsonins unite in some way with the bacteria, so that the latter fall a much easier victim to the phagocytes (leukocytes, white blood-corpuscles). Wright laid much stress upon the function of the opsonins in the production of

immunity; while Metchnikoff regarded "phagocytosis" as almost, if not quite, the only important factor concerned in immunity. It now appears that these two processes, opsonization and phagocytosis, go hand in hand, and that each is indispensable to the other.

By *phagocytosis*, we mean the ingestion and destruction, by digestion, of pathogenic bacteria by the wandering-cells (devouring-cells, polymorphonuclear leukocytes) of the blood, which, in response to the entrance into the body of pathogenic bacteria in considerable number, leave the blood stream and pass through the tissues to the focus of infection. There, under suitable conditions, these highly useful scavenger-cells, or phagocytes, surround and engulf the offending bacteria and destroy them by a process of digestion. This sounds simple enough; but, the bacteria must first be sensitized by the opsonins. Then, also, in some cases at least, the agglutinins and bacteriolysins play their part in making the microbic agents fall an easier pray to the phagocytes.

There are a large number of other immune substances that doubtless play an important, though a somewhat minor, role in the production of an immunity; but we cannot here go into the complex details, many of which are not yet well understood, even by the recognized experts in this special line of work.

Ofttimes, to employ a colloquialism, the phagocytes "bite off more than they can chew," taking up a greater number of bacteria than they can dispose of; or the bacteria may be of an extreme virulence; and, as a result, the defenders, and not the invaders, fall in the battle.

Pus is a mixture of blood-serum, living and dead white corpuscles, tissue-cells, and bacteria and the toxins of bacteria.

Some opsonins seem to be general in their action, while the great bulk are specific. That is to say, it seems that there is constantly on hand, in a healthy individual, a certain store of opsonin available against bacteria in general. But, infection with any particular pathogenic germ calls forth the production of a relatively greater amount of specific opsonin, the action of which is against that particular germ alone.

Opsonins are also found in human milk, in about one-fifth the amount present in the blood.³ This may possibly prove an important factor in the immunity of nursing infants against infection.

It is highly probable that the leukocytes, especially the large mononuclear variety, have

²Wright: "Studies in Immunization" (1910).

³Allen: "Vaccine Therapy and Opsonic Treatment"; 4th ed.; p. 29.

for one of their functions the production of antitoxins. In certain of the acute infections, notably lobar pneumonia, the prognosis is best when there is a high leukocytosis, and grave when there is no increase in the leukocytes, or even a decrease in their number (leukopenia). A connection between this fact and the role of the leukocytes in antitoxin formation is highly probable.

Bacteriolysins are believed to be formed by the polymorphonuclear leukocytes. In bacterin therapy, an attempt is made to

compel healthy tissues vicariously to protect diseased ones. The latter having failed to respond to infection by the elaboration of antibodies in quantities sufficient to overcome the infection, a stimulus is applied to the former by the subcutaneous injection of killed cultures of the offending bacteria, in the hope that the healthy tissues may respond by producing antibodies in comparatively large amounts, the deficiency thereby being made good at the focus of infection.

[To be continued.]

Adventures of a Frontier Doctor

No. 2. At the Mercy of the Skiptuat

By CHARLES STUART MOODY, M. D., Hope, Idaho

WELL, well, how time does fly. (Where, I wonder, have I heard that expression before?) It is now nearly twenty-five years since my wife, the brand-new baby, and I reached our destination on the eastern half of the Nez Percés Indian Reservation, then soon to be opened to white settlement. Clad in the garments of early spring, the country that greeted our eyes was a most beautiful sight; so beautiful, indeed, that even now when I look out upon some lovely landscape my mind unconsciously compares it with that Indian land of the years that are gone. What wonder that the simple-minded red man hesitated to sign away his title to this glorious land. As it was then, untouched by the plow of the husbandman, smiling in the sunshine, it was truly an ideal home for those simple children of the untilled wastes. All that is now changed; the restless, invading white man has harried the fair face of the land and caused it to bedeck itself with a different green; the original inhabitants have gone to face the sunset in the West, except for one, here and there, who, perhaps wiser than his fellow clansmen, has adopted the ways of living of the white brother and has managed to survive the cataclysm that is destined to engulf his race.

As the four-horse wagon, that had conveyed us across the mountains in a three-day's journey, drew up on the little green patch facing the shining river where we had chosen to fashion our habitation, there was none to greet us, save a few Indians lounging about. These redskins eyed our coming with stolid Indian indifference, except one. This one came up to us, and in fairly

good English gave us welcome, then reached up his hands for the baby. As my wife consigned the little one to his keeping, it was with much misgiving, little knowing at that time that one of the most lovable traits of the Nez Percés is their love of children. White men were few on the reservation and of white women there were none; a passing miner now and then, a few squawmen, those were all that we could see. The post-trader and his wife, four miles down the river, were our nearest neighbors. Rather a lonesome outlook for a young woman used to companionship and the society of her kind. Thank God! she was of the stuff that pioneers are made, and never, in all the years that were to follow, has she murmured at her lonely lot.

The Log-Cabin Home

We set to work immediately constructing a rude log cabin, wherein to dwell and store the few medicines and appliances my meager pocketbook had been able to procure. Time sped rapidly that spring; there was much to do and little help. The Indians were willing to assist, but did so in that spasmodic, ineffectual manner characteristic of the aborigine everywhere. When we arrived the salmon-run was on in the river, and, so, it was quite the usual thing for my helper for the time being to lay down his ax, get his canoe and go fishing for the day, thus leaving me to handle the heavy logs alone. As a slight compensation for his ungracious desertion, the Indian always shared his catch with us. Fortunately, I had been trained to woodmanship, hence was not at a loss as

to what to do. In due time our cabin was complete and we foresook the tent for our more substantial dwelling.

When the walls of our cabin were about half up, a tall old savage, dressed in all his native finery, rode up one day, dismounted and proceeded very minutely to examine the premises. Without vouchsafing a word of greeting, he walked all about the place, eyeing everything with ill-concealed scorn. His investigation completed, he mounted his pony and rode away.

"That," said the Indian who was helping me that day, "was the *hyas sikiptuat*." In other words, he informed me that our visitor was the chief medicine-man of the tribe. That was when I learned that the Indians still adhered to their ancient tribal customs, among which was the employment of the native medicine-man, or *shaman*, in illness, a piece of information that was destined to cause me a great deal of anxiety in the very near future.

Spring passed and summer came. We were having but little professional employment; for, the Indians were loath to trust their lives into the hands of the untried white "sikiptuat" and were seemingly content to heal themselves with that old tried and true remedy, the *vis medicatrix naturæ*, or through the incantations of the medicine-man. To tell the plain truth, my only patient for two months was a cow with a broken leg, in the adjustment of which, moreover, I did not cover myself with any particular glory.

Along late in June, my wife and I were seated on the river-bank one day, when we saw an Indian canoe coming down the rapids with the speed of an arrow. The canoe turned in to the shore and a stalwart savage leaped ashore. He came up and in broken English made us understand that his child was very ill and that he desired me to accompany him some half-day's journey up the river to his tent. From his actions more than his words, I gathered that the little one was suffering from some form of infantile diarrhea—a disease very prevalent among the Indians—and that the child was really seriously sick.

The First Professional Visit

Before going to my present station, my preceptor had received from The Abbott Alkaloidal Company (then just starting in business) a quite liberal-sized granule-case. This, one day, he handed to me with the remark: "Charlie, I am too old now to learn new tricks, but here is something that I

am inclined to believe will one day revolutionize the practice of therapeutics; take it and see what you can make out of it."

Thus far I had had but little opportunity to try among my Indians these alkaloidal granules, while this was an occasion where it would be impossible to carry a heavy medicine case. So, I slipped the little case filled with the alkaloidal granules into my coat-pocket and announced myself ready for the journey to see the ailing child.

Taking one side of the river, to avoid the swift current, my Indian boatman plied his paddle so effectively that we arrived safely at the Indian settlement just as the sun was hiding himself behind the western hills. Several families were making their summer home at this spot. Almost the first person I met, when I stepped ashore, was the old medicine-man visitor of the previous spring. The old fellow eyed me with such positive malevolence that I asked my guide what was the trouble, and was informed that the medicine-man was jealous of my interference in the case and was trying to incite the other Indians to mutiny. As we walked up the shore toward the tepee where the sick child lay, I noticed that the Indians drew aside and were morose and sullen, watching my every move with angry glances.

We entered the tepee, which was still hot and close from the heat of the summer day just passed. The little one, so thin and wan that it bore little resemblance to a human being, lay upon a couch in one corner while the mother vainly endeavored to drive away the flies that covered the little sufferer in swarms. I found the mother to be an intelligent Indian woman, who had been educated to some extent by that lovable Indian missionary, Miss Kate C. McBeth. I was pleased to find her in command of sufficient English so that my instructions were intelligible to her, for, at that time my command of the Nez Percés tongue was still decidedly limited.

Never did a case look more hopeless to me. The little fellow was so weak that he did little but moan, lying with upturned, half-closed eyes, while the bowels moved involuntarily every few minutes. Those of you who have practiced among the lower classes will recognize the picture without further elaboration. Intestinal antiseptics was then in its infancy, and only a very few practitioners were brave enough to advocate it; however, I resolved to give it such a trial as it had never had before west of the Rocky Mountains.

The child's heart action was a mere flutter, like the feeble efforts of a captive butterfly to escape, and I realized that something must be done at once, else my little patient would be numbered with the angels. My pocket-case contained a vial of glonoin, and, so, I took out a tablet containing 1-250 grain and dropped it into the child's mouth. In a few minutes this was followed by another. To my intense delight, I perceived a red tinge showing through the copper-hue of the skin and that the heart was responding to the stimulus. Then I proceeded to institute intestinal antiseptics. Before going on with this, however, I had the good sense to administer a copious enema of pure hot water.

My granule-case contained tablets of sulphocarbolate of zinc, a salt which my old-style textbooks asserted could not be given in greater doses than 1 grain. Here was a case, however, that demanded heroic treatment, and the little brochure on the granules, which I had been reading, insisted that zinc sulphocarbolate was perfectly harmless in 5- or even 10-grain doses. So, I crushed a 5-grain tablet in a little water and managed to get the child to swallow it. In a few minutes I gave another and yet another. The way I poured that zinc salt into that kid would have made the man who compiled the U. S. Dispensatory turn over in his grave had he heard of it; however, along toward midnight I had the pleasure of seeing the bowel movements become less frequent, the distressing vomiting cease, the upturned eyes come back to the normal, the continuous moan give place to calmer breathing. Then, tired out by my long journey and the constant vigil, I gave the child's mother some simple instructions relative to administering the medicine and told her to call me early in the morning.

The Nightly Surprise

I stepped outside the tepee, intending to go down to the river-shore and sleep the rest of the night on the warm sand. I had not proceeded ten feet when a rope fell over my shoulders, and before I could free myself it was jerked tight around my arms, a powerful and not overly clean hand was clapped over my mouth, several arms seized me and, struggle as I might, I was borne down to the earth. All of this was done in perfect silence and so quickly that I hardly knew what was happening. Dark forms were outlined above me as I exerted all my strength to free myself, and among them I discerned the gigantic figure of the Indian medicine-

man. In less time than it has taken to tell, I was bound, gagged, and carried to a tepee, on the outskirts of the village, was thrust inside, and there lay on the bare ground, wondering what was to happen next; indeed, to be truthful, I felt just a little frightened at the turn things had taken.

In a short time, I heard the sound of the medicine-man's tomtom beating in the tepee where the sick child lay, and heard also the monotonous drone of the old man's voice as he sang his incantations. I lay thus all night, the thongs cutting into my flesh, while I listened to the ceremony of the savage practitioner who had evidently taken this means of supplanting me.

Dawn comes early in these latitudes and it was perhaps no later than four o'clock in the morning when I heard the first sound of the Indians beginning to stir in the camp. Now, the Indian dog is a strange animal, half dog, half coyote, apparently, and will pay no heed to the Indians, but the smell of a white man seems to attract him. It was not long before a half dozen of these canines were sniffing about my prison, and soon one of them gave a long-drawn wolflike howl, which was chorused by the others.

Then, in a few minutes, I heard the patter of moccasined feet and a sharp command in a woman's voice. The dogs scattered and the mother of the sick child thrust her head inside the tepee. It was still dark inside and at first she did not see me; but, making a supreme effort, I rolled over. With a motion quick as a cat, the woman sprang into the tepee, whipped out a knife, and cut my bonds. As soon as my hands were free I tore the filthy rag out of my mouth.

"How is the baby?" I asked.

"It is better," she replied. "But, how came you here?"

I told her as briefly as possible.

"Lotwick told me that you had said the child could not live and were gone. Wait," she continued, then slipped out of the tepee.

I sat there in suspense for several minutes, fearful that the medicine-man or some of his followers would come and discover that I had been freed. After some ten minutes the woman returned, slipped into the tepee, and from the folds of her dress produced a heavy Colt's revolver fully loaded. "Take this," she said, "and use it if necessary."

That effective-looking weapon seemed to me like a friend from home. With it, I was prepared to face the medicine-man and all his friends. With the revolver clutched in

my hand, I left the tepee with her and walked over toward the place where the sick child lay. The medicine-man was still in the tepee and still engaged in his ceremonies. One glance at the child told me that it was much improved. I approached the medicine-man and told him to get out, at the same time emphasizing my remarks with

the revolver. While the words were probably not understood, it seemed the weapon spoke some sort of universal language, for the old chap sprang to his feet and vamoosed like a frightened rabbit.

I remained with the sick child until noon, then, with my Indian friend as canoe-man, shot down the river homeward.

Corporation Surgery

How the "Company Doctor" Handles Emergency Work

By SAMUEL C. BEACH, M. D., Chicago, Illinois

II.

IN THIS paper, some of the methods of handling emergency-cases of the kind that occur in factories and workshops will be outlined.

As a matter of interest, the subjoined table will show just what trades and occupations furnish the greater proportion of these, the civil occupations, exclusive of railroading, alone being considered. Railroad emergency-work is really in a class by itself and will be so treated in a later paper, while this one will be confined to the purely manufacturing industrial accidents.

Teaming.....	22.9 percent
Quarrying.....	15.7 percent
Mining.....	14.6 percent
Building trades.....	11.4 percent
Chemical manufacturing.....	9.2 percent
Electricity.....	6.3 percent
Glass.....	4.9 percent
Printing.....	2.8 percent
Manufacturing, average of all combined.....	9.5 percent
Farming.....	11.1 percent

It must be remembered that about four-fifths of the injuries handled are minor in character, and that they are of importance only because *time* is the great desideratum; in other words, the injury must be so cared for as to give the quickest possible positive result and prevent the loss of the fewest possible number of days both for employer and employee. Regarding this latter important point, the First-Aid Conference, at its meeting held in Washington, D. C., in August, 1915, decided that "the earlier the first aid, the better the immobilization, the more careful the transportation, the shorter [will be] the period of disability and the less the loss of function."

Speed does not necessarily mean the rapidity with which the relief-measures are undertaken and performed, but rather the

consistent, conscientious, painstaking manner of caring for the injured person and with the least possible loss of time; and to this end the most carefully planned organization must be built up. It must also be considered that the patient does not want to lose any more time than is absolutely necessary, inasmuch as he is dependent entirely upon the work of his hands for the support of himself and family; while, on the other hand, the employer does not wish to lose the time of his artisan, because the latter's work constitutes a cog in the great wheel of his manufacturing processes, without which it will move but jerkily.

When a Workman Is Injured

Inasmuch as speed applies to every step of the process which follows the occurrence of the accident, the manner of handling the case will be considered in detail.

When one of the men is hurt, he (if in condition) reports at once to his foreman, exhibiting the injury and stating how it occurred. If the injury is such that he cannot do this, then a stretcher (always kept within reach near the first-aid cabinet) is brought and he is carried to the hospital-room, if there is one in the building. If on account of the severe nature of the injury it should become necessary to call the surgeon (and this comes within the scope of the foreman's duties and is left to his judgment), the corporation-surgeon can always be reached at once; for, it will be remembered, he devotes his entire time to this work, so that, making a speedy run to the factory by automobile, he usually "gets on the job" inside of five minutes. The doctor thus sees the injury free from any but occupation contamination, the foreman having only applied a pad of sterile gauze from the first-aid cabinet, in accordance with his instructions;

for, the latter absolutely prohibits the *ad interim* application to the wound of any water or other cleansing or disinfecting agent, while in cases of considerable hemorrhage the foreman has instructions to apply only the sterile pad and pressure—it being considered better for the surgeon to apply the constrictor, if needed. The doctor now having assumed entire charge of the case, the actual dressing of the injury is performed, either at the surgeon's office or, if the lesion is one of major character, at the hospital, in this case only such details being attended to at the office as are necessary to insure safe transportation.

It will be observed that in the handling of the case thus far absolutely no time has been lost—no waiting to find telephone numbers, no sending for another surgeon because the first one called was out, no hurried consultations to determine what shall be done. All this has been foreseen and provided for; and, with the smoothness of the movement of a great mass of machinery, the injury is cared for according to the best-known methods of modern surgery, with the least possible loss of time, and with due regard for the interests of everyone concerned.

The relative frequency with which one meets the various kinds and classes of injuries is of interest, and the table below gives a fairly accurate picture for purposes of comparison and enlightenment. These figures, of course, will vary with the location and the nature of the surgeon's work; nevertheless, they will give an idea of the relative frequency with which the various classes of injuries are encountered. Thus, in a total of more than 5000 accidents, there were

Fractures	1500
Simple	700
Compound	875
Lacerated wounds	640
Contused wounds	510
Comminutions	500
Burns	290
Avulsions	230
Dislocations	85
Sprains	75

These classes will be taken up and treated individually in the order in which they occur in the above table.

Fractures: Diagnosis and Management

In the care of fractures, the only diagnosis accepted is an exact diagnosis; and this is not a difficult matter in over one-half of the cases met with; for, as will be seen by reference to the table, they are compound, and indeed comminuted, and all other conditions described

by the words that mean complicated, infected, and difficult to handle. The surgeon usually gets an inkling of the nature of the condition before he leaves the emergency-station, and, therefore, is fully prepared in the matter of immobilization-dressings, both permanent and temporary. In the simple fractures, the question of exact diagnosis is sometimes more difficult. At all events, the x-ray apparatus must always be within touch, so that a skiagram may be made following a careful examination and exact diagnosis of the position of the fragments; especially is this important when the fracture implicates the joint surfaces.

An attempt to place a permanent fixation-dressing is rarely made at the place of the accident; only a dressing of a temporarily retentive nature being made and then the patient transported to the office or hospital in an ambulance, where the permanent retention-dressing is placed in position. This dressing is made of plaster-paris, and reinforced with metal strips when it is necessary to fenestrate, as so often is the case.

The position in which the injured member is fixed depends wholly upon the nature of the fracture, its obliquity, amount of comminution, and many other modifying factors; suffice to say that here is where the resources of the surgeon are severely taxed, for, no rule can be formulated, one being guided and governed entirely by the necessities of the particular case. One daring surgeon with whom the author is acquainted dresses most of his compound fractures with a complete plaster cast, *without fenestrating*, and then lets the case go for eight to ten days without redressing—and he gets the most excellent results, too. His preliminary disinfection, operative measures for mechanical fixation, and manner of applying the cast, however, are most careful. Still, greater conservatism is to be recommended in these cases—one cannot be too careful.

Before the patient is discharged, it is well to take a final skiagram, for purposes of comparison—and the fact should be clearly borne in mind that the skiagram is not admitted as evidence in a court of law, unless it was taken under very certain specific conditions, which are not often complied with.

Lacerated Wounds

Lacerated wounds next engage our attention; and it is here that the question of disinfection comes so clearly to the front, and that the manner of application and what agent to be used becomes of such impor-

tance; for, it is in these cases that the action of our disinfecting agent can be studied from day to day and the results compared with other agents used in previous cases. Every surgeon has his favorite remedies, and naturally he praises these when speaking of the good results obtained by him—due entirely, of course, to the disinfecting agent used. However, the process of elimination has caused many of the older agents to be shelved, and more recent experience seems to point definitely to iodine as the ideal local antiseptic for general use; for, it is easily handled and applied in the form of the tincture or other solution. Thus, for instance, the United States Army medical department has recently adopted this particularly practicable agent in its service; namely: a mixture of 1 Gram of iodine and 1 1-2 Grams of potassium iodide is put into a glass tube, and this powder, when needed for use, is dissolved in 50 Cc. of alcohol or water. So, also, the use of iodine was highly recommended at the meeting of the First-Aid Surgeons held last August. Indeed, iodine is probably the antiseptic agent most universally employed at present in the treatment of accidental wounds.

However, certain factors are essential in order to obtain best results, and prime among these is that the wound be kept entirely free from water. Foremen in shops are instructed to keep the wounded men away from water, for it is so very natural to apply cold water to the part, in order to wash the blood away. It has been found that this wetting interferes materially with the antiseptic action of iodine, and not only limits its germicidal action, but has a tendency to give rise to blebs when applied to thoroughly moistened skin.

Next in importance comes the necessity of the freedom of the wounded parts from grease. This removal of grease and dirt can be effected with the aid of oil of turpentine; the latter being removed with alcohol. It is well to bear in mind, however, that it is of more importance to apply tincture of iodine *early and thoroughly* than to "dab and fuss around" with other agents without really accomplishing much good; for, iodine exerts the greatest germicidal action, and the sooner it is applied, the sooner there will be inhibition of pernicious bacterial activity.

Regarding these lacerated wounds (of which, as seen by the table, there are quite a large proportion), it is to be remembered that they are rarely simple lacerations, but mostly are produced by a combination of crushing, cutting, and tearing forces; and this makes good results much harder to ob-

tain, inasmuch as there has been ground into the tissues all manner of occupation-detritus, which obviously increases the difficulty of obtaining anything like a clean surface and thus retards the healing process.

Importance of Conservative Surgery

The nature and importance of speed having been well emphasized, just a word will here be written regarding another cultivated surgical virtue, but one very difficult to attain; namely, conservatism. The surgeon is so often tempted, especially at the end of a long and arduous day, to gain a rapid and brilliant result by amputating. But, wait—is the result truly a brilliant one? The workman is brought in with a hundred-thousand-dollar maimed arm. Yes, that man's arm is worth all of that sum, when one considers the number of years (if he be young) of possible usefulness lying before him; the help and support which he should yet give to future workers, his children, born and unborn. Well, there he lies on the table, and it's up to *YOU*.

Right here is where thought and the habit of thinking rightly comes in handily; for, under such circumstances, your first thought will then be, *conserve!* Straightway you will begin to plan and scheme to save just as much of that man's arm as you can; right here is where you will begin to snip and whittle and iodinize, put on a simple moist dressing; and then do all these little things over again at the next dressing. Nothing brilliant about that, no, no! But, still, your victory will be immeasurably greater, for, the final result will be far better, and nature's virile forces are standing invisibly at your elbow, ready and willing to help. So, then, my friend, conserve. Plan, plot, scheme, invent, utilize every possible chance to save that arm. It is so easy to amputate, I know, and it can be done so quickly. But, you can not sew that arm back on again! Trim and stitch and dress, trim and dress, day in and day out—it is a fine fight, worth any man's mettle; and the reward is so great that one single victory is worth many a cruel failure.

If, perchance, someone is reading this paper to find rules for the care of this class of injuries, then let it be said at once, there are no such rules. Make up rules for yourself as you go along—and then make a new set for your next case. For, that's what you'll have to do. Only, running through each and every set of your formulations, showing in letters of fire, and thereby burning deep into your inmost consciousness, let that word stand out

boldly—CONSERVATISM. Then, with this obligation as a trusty sentinel, you may wrap the mantle of surgical conscience about your form and lie down to pleasant dreams.

Conservatism Practically Applied

Now to get down to "brass tacks" on conservatism, just let us glance at the figures on the mortality following conservatively treated cases and those subjected to radical measures—it will surprise you to learn that it has been estimated that the mortality is 4 percent under conservatism as against 20 percent under radicalism.

When a patient comes to you with multiple injuries, put your pride "in your pocket" and get your professional brother from across the street to help you, letting him do one operation at the same time that you are doing another; for, it has been found that performing operations synchronously under such conditions will lessen mortality tremendously. Would that our professional breadth and charity might keep even pace with the great advances that have been made in surgery, for then the time would speedily come when we no longer should hesitate to send for "the fellow across the way," resting assured that he would do as much and as well for us and our patient as he would for his own patients, and only be thanking Providence for the proximity of such a good neighbor.

Contusions, Burns, Shock

Contused wounds occur next in order of frequency, and these are likely to be accorded very little attention, for the reason that they do not require surgical dressing. These little injuries, however, disable the workman, especially on the day after they happen; moreover, by causing restriction of the movements with which he performs his daily work, he is rendered more liable to still greater injuries.

For these reasons, even little contusions should be given careful attention; hot fomentations and liniments being applied at home, while vibratory massage is given daily at the office, until the patient has complete restoration of usefulness. There comes to mind one case, when the man presenting himself for treatment was laughed at by the young medical assistant, but when examined later in the day by his principal he was found to have sustained partial rupture of the biceps muscle transversely, which laid him up for six weeks and resulted in an impairment of usefulness from which he never fully recovered.

Comminutions have really been considered under the head of lacerations, and they occur

so often in conjunction with the latter class of wounds that further space will not be devoted to them. It may be said, however, that they are the class of injuries that respond to moist dressings *often renewed*; also, that they must be carefully watched for gangrenous spots.

Burns are sustained by foundry-workers, from contact with hot and molten metal. These (if slight) are best dressed with some unguent that not only excludes the air, but will keep the tissues clean as well. A simple unguent for the purpose may be made by triturating boric acid with vaseline; mention should also be made of the preparation known as unguentine, which is deservedly popular. Burns produced by chemicals—strong acids and alkalis—are to be speedily neutralized. This usually is done at the scene of the accident, from the first-aid cabinet, but may well be repeated when the victim is seen at the office. Severe tissue-destructive burns are to be treated like any other open wound, free drainage being provided for.

Avulsions have already been considered, while dislocations and sprains may well give way to a consideration of surgical shock.

Surgical shock is seen more or less in every surgical case attended. The many theories of the causation of shock are important only in so far as they give us a foundation for intelligently treating the condition. For practical purposes, it may be considered a depressed condition of the entire system, supervening as the result of an impression produced upon the central nervous system—in our cases, by virtue of the incident injury and its sequelae. Thus, we may have shock as the result of a mental impression alone, owing to contemplation of the accidental injury; or, the cause may be solely the accidental injury; and, finally, hemorrhage, whether produced by injury or disease, may be the inciting cause.

In any event, our course is clear, and we may follow but one line of treatment—stimulation. This may take the form of hypodermics of glonoin, strychnine, sparteine, inhalation of aromatic spirit of ammonia or the internal administration thereof, warmth to the extremities, and elevation of the legs—any or all of these measures being entirely dependent upon the given surroundings and whether severe hemorrhage is present or not.

Hemorrhage is the first consideration and should be stopped at once, preferably by the application of forceps, if possible, or by means of the constrictor if forceps cannot be applied; the operative ligation being the very last resort, and then only under favorable sur-

roundings and after all other means have failed.

The administration of saline solution, injected into the rectum, intravenously, or under the skin of the abdominal region or back, is still a sheet-anchor, although it must largely be confined to the time when we can get our patient to the hospital and have the assistance of nurses and the more favorable surroundings.

Electrical Shock and Gas Poisoning

Electrical accidents are comparatively frequent and may well be briefly considered here. In these days of electrical power sent hundreds of miles from a central generating station and furnishing energy to industries of many varieties, it behooves us to know what to do and how to do it quickly.

If one sees a man writhing and jerking from contact with a "live" wire, it is well to know enough to prevent one from adding another victim in a vain vain attempt to rescue the first one. Do not be afraid to step in and grab the victim's clothing as long as your shoes rest on a dry surface and you do not grasp any metallic object, such as buttons, belt-buckle or tools. One may even throw down the coat to make a dry spot for the feet. Then, using preferably only one hand, give a sharp, quick pull to the victim's clothing and try to break his hold on the wire. Of course, you will send someone post-haste to the closest switch, to have the current shut off, should the attempt to disengage the man not prove successful.

When the contact is broken, lay the patient on the ground, face down, and establish artificial respiration, having an assistant give stimulating hypodermics at the same time. In producing this artificial respiration, the best method is to lay the patient face downward and, taking a position astride his hips, to make pressure over the lower ribs, with the arms held perfectly rigid. The number of respirations per minute may be timed by the breathing of the operator. This effort should be persisted in for at least two hours, and even longer if there seems to be any chance of establishing automatic breathing.

Rhythmic pressure upon the precordial region should also be tried, to help the heart's action, when necessary.

Electrical burns are to be treated the same as ordinary burns, remembering that they are very intractable and slow to heal.

Inhalation of Gas

Men working in and around gas-manufacturing plants are sometimes overcome by the

continued inhalation of the gas, the usual kind being an impure carbon monoxide. The first symptoms are, pain and weakness, these appearing first in the calves of the legs and later becoming general, to which are added dim vision and vertigo. The surgeon seldom encounters these symptoms, not being notified, usually, until complete unconsciousness has supervened. The condition, of course, is asphyxiation combined with carbon-monoxide poisoning, and the indications for treatment are, the securing of rapid, vigorous and thorough elimination. This object is accomplished by at once removing the patient to the open air and there starting artificial respiration. Oxygen gas should be at hand and be used freely; remembering that, whatever efforts are made to resuscitate, they must be carried on persistently for two or three hours, or even longer. Atropine, sparteine, strychnine, or glonoin should be given hypodermically, while the body of the patient is enveloped in a warm blanket, in order to conserve surface temperature.

Too much cannot be said regarding the senseless administration of whisky in emergency-cases. It has, unfortunately, passed from the position of a remedy to that of a habit, but one which thinking surgeons nowadays are very generally discountenancing; for, the fallacy involved in the "give him a drink of whisky" has been pretty thoroughly demonstrated and few, if any, corporation-surgeons now carry it in their emergency-bags.

Eye Injuries. Tetanus

In *eye injuries*, aside from the lodgment of foreign bodies on the surface, the careful surgeon promptly calls in the eye-specialist; for, it is in cases of this class that more trouble has developed than in all the rest. The sole aim and intention of our treatment must be to do the *best* that can be done, and no general surgeon, much less a general practitioner, should ever attempt to pass an opinion upon an injured eye, especially when the injury is of a lacerating or penetrating nature or when the history of the injury makes it possible that such may be the case. Sympathetic ophthalmitis is too terrible an enemy to be combated, except by one who possesses special training. It is, therefore, the part of wisdom to place a first-aid dressing over the injured eye and at once to take the patient to an eye-specialist.

When there is the least possible chance for the wound to have been infected with tetanus-germs, as in injuries to teamsters or woodworkers, an injection of 1500 units of

antitetanic serum should be given at once; the site of the injection chosen being over the nearest large nerve-tract in the immediate neighborhood of the wound. In making this injection, it is well to push the needle well into the deeper tissues, being especially careful to avoid making it merely subcutaneous. Recently a powder containing the desiccated tetanus-bacillus has been prepared, and European surgeons are using this to dress suspected gunshot wounds.

The statement has been authoritatively made that the percentage of accidents in America is much higher than in Europe (of course, this was before the present awful war, which establishes a new special record), but, whereas the author is not prepared to

dispute the statement so far as regards railway accidents—where distances from a thorough and well-supplied first-aid base are much greater than in Europe—yet, as regards civil accidents among industrial plants, the assertion is confidently made that we, in America, are ahead of our European brethren in organization, speed, transportation, and many other facilities for the care of casualties of the kind that occur in and around our big manufacturing plants; and any person disagreeing with this statement is earnestly requested to visit and inspect some of the wonderful hospital-plants now being maintained by many of the large corporations. It will prove an education in itself and will be well worth the time spent.

Pruritus Ani and Pruritus Vulvi

By WILLIAM F. WAUGH, M. D., Muskegon, Michigan

HOWEVER it may be with you, my readers, I have always been as one of the blind men who laid hands on some part of the elephant. A striking case presents itself, or a spectacular recovery ensues, and I can not refrain from jumping at the conclusion that I have mastered that one particular malady. Is it not relatively true that we, all of us, generally form our conceptions of a disease from some single case that has impressed us profoundly?

A man walked into my office, laid a revolver down upon my table and said: "Unless you stop this damnable itching, I shall blow my brains out right here and now!"

Pruritus Complicating Narcotic Cure

A physician applied to me for cure of the morphine-habit. Removing the drug, anal pruritus set in with fiendish intensity. Determined to overcome the seemingly trifling malady that threatened to demolish the cure of the habit, I set to work. A rather compendious library was ransacked and every prescription and suggestion was culled. I procured alleged remedies by the dozen, and tried out everything at all promising in sight. Absolute failure was my reward. Later, I had occasion to open this man's abdominal cavity, and I found the colon shrunk to the diameter of a lead-pencil, and along each side there was a row of little cavities, in each of which reposed a scybalum. The discharge from these pockets kept up the irritation that occasioned the itching. The lumps were

removed and the bowel was cleansed with a warm solution of zinc sulphocarbolate, and the anal itching ceased until there occurred a reaccumulation of the fecal concretions.

Naturally, I jumped at the conclusion that this form of pruritus ani was due to irritation from retained fecal masses, and I acted upon that assumption. I had quite a series of cases in which relief actually followed the complete emptying and disinfection of the lower bowel. Small enemas of the zinc-sulphocarbolate solution, 5 grains to the ounce, prevented the nocturnal attacks of anal itching, which, beginning the moment the patient warmed in bed for sleep, occasioned great distress.

Then the treatment failed in one case, and the spell was broken—failure became the rule. I had only grasped the elephant's tail—so like a rope!

Third case: An English authority recommended scratching in moderation, and this was repeated to a patient. He took it seriously, and scratched immoderately. The pruritus rapidly increased, and he scratched the harder; until he tore up the tissues and let the parasites in to the deeper layers; and the result was a series of tumors that extended into the scrotum and back to near the anus—four in number, spindle-shaped, soft, not very tender. One suppurated, and then another, discharging blood freely and pus scantily. The others resolved slowly, vestiges being still present after two months. The laboratory found only staphylococcus albus.

So I was driven back to the local applications that had failed so egregiously in my early encounters; but I retained the emptying and disinfecting of the lower bowels as a preliminary. But which local application?

If we are dealing with a local parasite, we want an effective germicide, and one that affects the deeper layers of the skin as well as the surface—one with some penetrating powers. Begin with iodine. Clear the bowels with a sulphocarbolate enema; washing the perineal surfaces well with the same after soap and water; dry carefully, then paint with undiluted tincture of iodine. Repeat every night just before going to bed. If pruritus sets in, get up and apply iodine again. But—refrain from scratching!

The patient reported that for the first few nights the iodine application acted much as the compound tincture of benzoin had done, but seemed to "take hold" rather better. Then the itching seemed to be less intense, and it did not need a second application of the iodine. Two weeks the treatment was continued, and every trace of the malady had disappeared. The induration of the skin was dissipated and all fissures had healed. Three months later, the patient reported that several times slight itching had occurred, but each time a single application of the iodine had quelled it.

At the suggestion of Dr. J. E. Frazier, of Endurance, Colorado, I have also applied camphor to the itching area and have found it exceedingly active and affording quick relief. Since then I have employed mixtures of tincture of iodine and spirit of camphor, with decided benefit, in old, indurated cases especially.

Looking over the recent literature of this affection, I observe that some of the surgeons sever the nerves supplying the pruriginous areas, while one recently recommends cutting off the arteries, to lessen the blood-supply. After burning away the surface with fuming

nitric acid and having the itching recur where the skin had been, one gets pessimistic as to such measures. At best, they are aimed at the symptom, and not at the cause.

By the combination-method herein described, we strike at all the known causes—irritation from rectal discharges, fissures and rhagades, local parasitism, and uncleanness. Naturally, if there is present any rectal affection, hemorrhoids, fistula, "pockets and papillæ," and the like, we must give those the requisite treatment.

My series of cases during the few months that this method has been operated is too small for any positive statement. I am merely describing my present treatment, in the hope that my confrères may give it a general trial, so that, by reporting their results, we may arrive at a fairly correct estimate of its value and applicability. If one hundred readers of *CLINICAL MEDICINE* try it out, we ought to get a better idea of its value than any one of us, singly, could give from his single experience.

Will you do this?

Pruritus vulvæ presents the same problem, but with even greater need of disinfecting the discharges from the rectum and vagina—the latter being prone to cause itching at about the menstrual period, especially. Sometimes it is not sufficient to apply our germicides to the vaginal tissues, the endometrium having to be treated, likewise, with silver or some iodine preparation. Still more effective is the application of a galvanic current from the negative pole, on a properly insulated electrode.

For the vaginal douche, the zinc-sulphocarbolate solution is amply effective—provided the salt is chemically pure. For our manufacturing chemists, I must bear this testimony—despite the interference occasioned by the great war, I have had no difficulty in securing pure drugs, although, of course, the price has mounted very high.

SO GREAT is the effect of cleanliness upon man that it extends even to his moral character. Virtue never dwelt long with filth; nor do I believe there ever was a person scrupulously attentive to cleanliness who was a consummate villain.—*Rumford*.

Cystitis and Its Treatment

By GEORGE H. CANDLER, M. D., Chicago, Illinois

Author of "Everyday Diseases of Children"

[Continued from page 49, January Issue]

The Clinical Picture

THE symptoms of acute and chronic cystitis are to a certain extent similar. Frequent desire to urinate, pain in the region of the bladder, back and perineum, occasionally referred to the rectum, and pyuria, are present in practically every case. However, in some of the milder forms of chronic cystitis there is comparatively little pain, yet the constant desire to urinate, and the tenesmus accompanying the act, render the patient's life miserable. When retention is due to prostatic hypertrophy, the condition is particularly distressing and in a short time the patient, in sheer desperation, resorts to the use of the catheter.

In acute cystitis urgent desire to empty the bladder may be experienced as often as two or three times in each hour; and the more frequently the act is performed the more acute becomes the burning sensation, which is, of course, due to compression of the engorged vessels surrounding the sphincter vesicae. After each urination, cramp in this region may be severe enough to cause the patient to cry out or even faint. In the majority of cases, pain in the glans penis occurs during or independent of micturition; and, more rarely, constant distress in this region and through the corpora cavernosa is complained of.

The urine will be found concentrated, highly acid, as a rule, and it contains more or less pus, mucus, and epithelial debris. The pulse may be accelerated and the temperature elevated one or two degrees. In this connection, it is well to remember that fever is particularly likely to exist during an exacerbation of chronic cystitis, and in pericystitis. In the latter condition (which may follow a mild cystitis or vague abdominal or pelvic pain), there will be more or less suprapubic swelling corresponding to the shape of the bladder when full. Tenderness on pressure is pronounced and constant dull pain is experienced throughout the lower abdominal region. The patient loses appetite and strength and exhibits all the symptoms of pyemia.

Perivesicular Inflammation

Unfortunately, perivesicular inflammation following or accompanying, as it may, trauma,

pelvic cellulitis, appendicitis, prostatitis, pyosalpinx, parametritis, and similar conditions, is not always readily recognized, and therefore the essential remedial procedure (suprapubic or perineal incision and free drainage) is not instituted until unnecessary damage has occurred to the tissues involved and the patient subjected to much needless suffering.

The physician should remember that whenever a swelling persists in the bladder region after that viscus has been emptied perivesical inflammation is reasonably certain. If in addition there is elevation of temperature, pain upon pressure, and more or less tenesmus, the diagnosis may be considered settled.

In the mild forms, it is true, resolution may occur and occasionally a fistula forms between the suppurating area and the bowel or bladder, this permitting the discharge of the pus. However, it may be regarded as axiomatic that the treatment of pericystitis is *surgical* and the sooner incision is resorted to the better the prognosis. It is, of course, unnecessary to add that the underlying causative condition must be discovered and, wherever possible, corrected.

Treatment of Acute Cystitis

As has already been pointed out, treatment of acute cystitis, to be really effective, must be based upon an intelligent conception of the conditions present in the affected individual. In other words, one must not treat a disease-name, but rather such morbid processes as really exist at the time. In every instance, examine the urine *before* administering any medicine, and if there is reason to believe that the patient is taking home-made or other nostrums, order their discontinuance for forty-eight hours and then secure a sample of the urine.

In the interim, order a very light diet, prohibiting entirely all alcoholic beverages, coffee and tea, and instruct the patient to drink at least three pints of pure water or, better still, thin barley water, during each twenty-four hours. If the ordinary water supply is known to be poor and distilled water is available, order this used; under other circumstances, insist upon thorough boiling of all suspicious water. A properly prepared buttermilk may be used as a beverage, also skimmed milk or milk and lime water. Wherever possible, order the

ingestion with each draught of milk of a reasonably full dose of some virile and dependable preparation of the bacillus bulgaricus.

When the exact physical condition of the patient has been definitely ascertained, and the urine examined, the physician will be in a position to decide whether internal medication alone will suffice or whether local treatment is likewise necessary. He will *know*, also, whether the cystitis can reasonably be expected to yield to such treatment or whether it will require operative intervention. Should the latter be indicated, the patient should be placed in the best possible condition and presented to the surgeon at the earliest possible moment. Nothing, as a rule, can be gained by delay in these cases; in fact, usually too much time has been lost before the rational diagnosis can be arrived at.

Relief of Pain

Under ordinary circumstances, the first essential is to relieve the *pain*, and while many clinicians depend for this purpose almost entirely upon morphine, codeine, or chloral, the administration of more than one or two doses of these narcotics is decidedly unwise. In the acute exacerbations of chronic cystitis, particularly when the patient is advanced in years and has little or no resistance, it is a very easy matter to establish the opium habit; and, once the victim of an infected bladder realizes that relief from the terrific tenesmus and burning can be secured by the use of one or two little white tablets, he is reasonably certain to demand these—and get them.

Of course, cases occur where it is necessary to use morphine or codeine, but in every such instance the character of the drug should be withheld from the patient and the dosage kept as low as possible. I have found it desirable to alternate codeine, morphine, and hyoscyamine, giving each drug for twenty-four hours. In the great majority of instances, the well-known combination of hyoscine, morphine, and cactoid can be used to advantage; the “modified” formula (hyoscine hydrobromide, gr. 1-400; morphine hydrobromide, gr. 1-16; cactoid, gr. 1-128; pilocarpine hydrochloride, gr. 1-64, and caffeine, gr. 1-32), proving peculiarly efficacious. One such dose may be ordered every two, three, or four hours to effect, then less often. In the meantime, the physician will, of course, attempt to remove the abnormal conditions which cause the pain. In the most severe cases we may find it best to first administer

a hypodermic of morphine, thus convincing the sufferer that we do know how to give relief; the anodyne effect may then be maintained by the cautious internal use of the modified H-M-C formula.

Local Applications for Pain Relief

Under ordinary circumstances, however, the physician should proceed along the following lines: A copious enema of warm physiologic saline solution is administered with the patient in the lateroprone position, and immediately thereafter hot epsom-salt compresses are applied over the bladder. Occasionally a hot sitz bath may precede this step. To prepare the compresses, dissolve one ounce of magnesium sulphate in each quart of water and keep this solution as hot as is tolerable; saturate therein a large bath towel, folded so it will just cover the lower abdomen. The towel should be wrung out, before its application, and covered quickly when in place with a second *dry* towel. These compresses should be changed every fifteen minutes and the treatment continued for two hours.

Usually immense relief will be afforded by these applications, which may be made every night or even twice daily. During the acute stage the patient should remain in bed, but if up and about must on no account be allowed to get chilled or wet; neither should he exert himself physically until the inflammatory conditions are well under control.

After the initial enema, give calomel, gr. 1-6; podophyllin, gr. 1-6; and irisoid, gr. 1-6, half-hourly for four to six doses, and two hours after the last dose a copious laxative saline draught. Thereafter, order the laxative (preferably one containing lithia) once or twice daily, and every third night repeat the cathartic. If the urine is highly acid, prescribe hexamethylenamine, grs. 3 to 5; arbutin, gr. 1; and sodium benzoate, grs. 5, every three hours, with at least six ounces of thin barley water or other mucilaginous beverage. If the urine is alkaline, substitute ammonium benzoate or add acid sodium phosphate in place of the sodium benzoate. In severe infections, the dosage of arbutin may be increased to 2 or even 5 grains.

When hyoscine or hyoscyamine is not being administered (as in the modified H-M-C formula), 1-1000 grain hyoscyamine sulphate may be given with 1-3 grain hamameloid and 1-3 grain eupurpuroid, every four hours.

This medication, modified somewhat, perhaps, to meet individual requirements, will prove promptly effective in the majority of

instances, but now and then we shall find it necessary to irrigate the bladder every second day—rarely oftener. After a somewhat extensive use of the various antiseptic agents recommended for irrigation, I now confine myself almost entirely to a mild boric-acid solution, followed by 1 to 1000 chinol, or 2 percent ichthyol solution. If colon bacilli are abundant, I use physiologic salt solution with a recurrent catheter; then, when the bladder is thoroughly drained, close the outlet and slowly inject the contents of one ampule of bulgarian bacillus bouillon. I also order one-half ampule of this bouillon internally, twice daily, the first dose on awakening, and the second just before retiring at night, and likewise inject, every second or third day, one ampule of stock colon-bacillus or Van Cott combined bacterin. If the gonococcus is demonstrated, the gonococcus combined bacterin will be substituted; and the patient receives (in alternation with the hexamethylenamine and arbutin, and replacing the hamameloid, hyoscyamine and eupur-

puroid combination), calcium sulphide, gr. 1-3; camphor monobromated, gr. 1-3; hyoscyamine sulphate, gr. 1-3000; methylene blue, gr. 1-3.

If the pain is unusually severe and it is deemed inadvisable to administer morphine or codeine hypodermically, suppositories containing 1-8- to 1-4 grain each of morphine sulphate and extract of belladonna may be employed. Under such circumstances, the lower bowel should first be thoroughly flushed with normal saline as hot as can be tolerated. Very frequently such irrigation will entirely relieve the pain for several hours. *The less opiates we use in cystitis the better.* Chloral butyl hydrate is a reasonably satisfactory substitute.

When there is more or less proctitis, or merely extreme sensitiveness of the lower bowel, rectal injections of thymol iodide in purified cottonseed oil may be given after stool and on retiring. They nearly always afford great comfort and, in my opinion, euphorphen exerts a distinctly remedial influence.

[To be continued.]

Postoperative Treatment

The Physician's Duty After the Operation

By C. W. CANAN, B. S., M. D., Orkney Springs, Virginia

MY SUBJECT, on first thought, may seem rather commonplace, but is, without doubt, one of much importance. The reputation of the surgeon as well as that of the attending physician many times hinges upon the treatment the patient receives after having been operated upon. But, even, to say nothing of these professional reputations, humanity demands that the patient be vouchsafed the very best chance possible for his or her recovery; yet, the result of many a brilliant operation is sadly marred by the absence of intelligent after-treatment. The present article is designed especially for the benefit of the country physician, inasmuch as many patients are turned over to the attending physician after they have been operated upon in the hospital of the smaller town or by a surgeon called to their homes.

As we all know but too well, the college-professor and our textbooks go into minutest detail as to how to make the patient ready for an operation, but either tell us very little, if anything, as to how the patient should be managed after he leaves the operating-room. These authorities expect the prac-

titioner, irrespective of his lack of experience, to be guided by general principles—which is all right, of course, to a certain extent. Nevertheless, every one of us knows that it is careful attention to the minor details (that are ever cropping up), more than anything else, that enhances the patient's chance for recovery. And this is not at all strange when we remember how even the slightest infringement of the rules of antiseptic surgery may cause the death of the patient.

Owing to the limitation of space, it will be impossible to go into every detail of the after-management of the various operations; consequently only the most important ones will be chosen, and the most up-to-date treatment be described for each.

The First Necessary Steps

Postoperative treatment begins as soon as the dressing is complete, and often even when the patient is still upon the operating-table and under the influence of the anesthetic. We refer here especially to lavage of the stomach. To our knowledge, there is no one measure that adds so much to the patient's comfort

as a thorough washing of the stomach. When the tube has been introduced into the stomach, warm water should be poured in and siphoned out again and again, until it returns clear and unstained. This procedure not only removes the contents of the stomach, but a goodly quantity of ether is eliminated at the same time. Then the patient is carried to the ready-prepared room and put to bed.

If the operation is one that is likely to cause much suffering, the patient may be given a narcotic tablet, because the result in many operations depends upon absolute quietude. A single bedstead of iron is always preferable; still, if such is not available (as is the case in many private homes), an ordinary wooden bedstead will do. Folding beds are never admissible. The bed should contain a hair mattress resting upon wire springs. Between the mattress and sheet a rubber sheet should be placed if there is likely to be much discharge or unconscious voiding of urine or feces; and in these cases a folded draw-sheet should be placed across the middle of the bed, this being easily removed without materially disturbing the patient. Folds in the sheets must be avoided, for they very quickly produce bedsores—a complication very liable to occur during prolonged decubitus. If at all permissible, the position of the patient should be frequently changed; while daily sponging with warm water, followed by a rub with alcohol, greatly aids in reducing the chance for this disagreeable complication.

If the operation has been at all prolonged, or if there are evidences of much shock, as soon as the patient has been placed in bed, he should be surrounded with hot-water-bags. However, the physician must see to this himself, unless a competent nurse is at hand; for, patients have been seriously burned by careless placing of these hot appliances. This is especially important while the patient is unconscious. I call to mind two patients who were thus severely burned. One was a child, who received a burn so severe that two toes had to be amputated. The other, a man, received a burn on his thigh, that caused a great deal of suffering and kept him in the hospital two weeks longer than otherwise necessary. Carelessness in this matter is certainly to be condemned.

Concerning the Patient's Position in Bed

Next, the position of the patient is very important, and it must be varied in accordance with the nature of the operation performed. Especially in operation for *appendi-*

citis, with rupture of the abscess, or for suppurative peritonitis, there is nothing so important in the aftertreatment as the position of the patient. The accepted position in this condition is known as the semiinclined; the head of the bed being raised enough so that it forms a slightly inclined plane; which is the most favorable position for thorough drainage of the abdominal cavity. A surgeon of one of the large hospitals told me recently that as long as they employed the horizontal position they lost from 75 to 80 percent of this class of patients, but that since adopting the inclined position the death rate had been reduced to 10 percent, and that these fatal cases represented principally patients who were moribund before the operation was performed.

Another very important procedure in these critical cases is, the use of physiologic salt solution. I do not refer to infusions made into the circulation—which are very important under certain conditions—but mean the introduction of the salt solution into the bowel by the drop-method; that is, the apparatus for this purpose should be so fixed that the fluid issues only drop by drop, so that the mucous membrane of the colon can absorb it as fast as it is introduced. This measure is important in all critical conditions in which the abdomen has been penetrated or opened.

After operations on *head*, *neck*, and *chest*, elevation of the upper part of the body is considered most favorable, barring one exception; this being laryngeal intubation. When this is performed, the head should be kept very low, in order to prevent "schluck-pneumonia"—one of the most dangerous complications that can befall this class of patients.

The dorsal position is best suited after *laparotomies* or operations in the inguinal and perineal regions. The comfort of this class of patients can be greatly added to by instructing them to flex their thighs and then to place a pillow or some folded cloths underneath the knees. This class of patients often complain of the weight of the bedclothes, and this difficulty can be overcome by making a wire cradle and placing it so that it will keep the covering away from the abdomen.

After *amputation of a breast* the arm on that side should be fastened to the chest, in order to prevent moving of the pectoral muscles; these contractions otherwise causing unnecessary pain and interfering with the healing-process.

Before leaving this subject of position, I want to call attention to a complication that

sometimes occurs during a prolonged period of recumbency. I refer to *hypostatic pneumonia*, which is very liable to supervene in the aged when allowed to lie in one position for any great length of time.

Postoperative Vomiting

I have already referred to lavage of the stomach, immediately after the operation, for the purpose of preventing nausea and vomiting as a result of the anesthetic. While this procedure surpasses all others in preventing this trouble, there is still much to be done in certain cases to make the patient comfortable. If, after all, vomiting should continue, giving absolute rest to the stomach is our best remedial aid. We should not be influenced by the patient's begging for water, however great the thirst; for, the vomiting will continue. The patient must understand that the more water you give him, the more he will want and the oftener he will vomit. Cracked ice is often given, but this is like water—therelief is only transient—the stomach soon fills up, and the vomiting is repeated. Under these circumstances, hot water, given a spoonful at a time, is superior to crushed ice; still, if at all possible, the stomach should be kept completely empty, and vomiting will cease much the sooner for it. When, however, the thirst is very great and the vomiting persisting, an enema of hot physiologic salt solution is the best measure at our command to afford relief. A mustard-plaster placed over the middle of the stomach until the skin shows red is also beneficial in some instances.

Feeding the Patient

One of the most important duties in the whole field of postoperative management is, the feeding of the patient. The diet and the manner of feeding necessarily varies with the nature of the operation performed, but it is especially important after *laparotomies*, more especially operations on the gastrointestinal tract. Here, no feeding should be attempted by the stomach for four or five days, or even longer, according to the condition of the patient. We call to mind a case of gunshot wound of the stomach in which both walls of that organ were penetrated by a 44-caliber bullet, and in which instance feeding by the mouth was omitted for eleven days; and the patient recovered perfectly.

These patients should receive, every two or three hours, a nutrient enema composed of 2 drams of beef-juice and 4 ounces of peptonized milk. If stimulants are needed, 1-2 ounce of good whisky may be added. Should

the temperature exceed 102° F., 5 grains of quinine sulphate, rubbed up with the white of one egg, may also be added, and this continued until the temperature declines or there are manifestations of quinism. Should the bowel prove irritable or the pain be intolerable, opium or codeine may be added to the enema. The rectum should be washed out after every third or fourth nutrient enema. Under no circumstance should feeding of the mouth be thought of as long as the patient vomits, irrespective of the nature of the operation.

After *amputation of the tongue* or operation on the jaws, patients can be fed through the stomach-tube (which must be well oiled and carefully introduced); this being repeated three or four times every twenty-four hours. In gastrostomies, nourishment may be poured in through the gastric fistula. After intubation, it often becomes necessary to nourish the patient by introducing food through the nose. A Nelaton catheter is best for this purpose, attaching it to another tube. The catheter should be introduced through the lower nasal fossa and thence into the esophagus to the stomach. But very small quantities of nutrient should be introduced at a time. Beef-juice, milk, peptonized milk, and other liquid nutrient may be used in this way.

After laparotomies and especially after operations upon the genitourinary tract and rectum, the bladder must be emptied frequently by catheterizing. The bladder should never be allowed to go unemptied longer than eight hours, being sure to observe the strictest asepsis. In some instances, a self-retaining catheter will have to be employed; but, if possible, do not leave it in longer than forty-eight hours.

Important Symptoms After Operations

That we may better perform our duty to our patients in reference to after-treatment, we now will enumerate briefly some of the most important symptoms that occur after operation.

Vomiting has already been discussed. During the first twenty-four to forty hours after the operation, the temperature may rise until it reaches 102.5° F., but this should not be considered a cause for alarm, especially if thereafter it begins to decline. However, should it continue to rise, then the patient must be carefully examined for some possible complication. Often this febrile temperature is caused by absorption of toxic material, because the wound has not been duly dressed. Or, if there be a sudden rise of temperature

preceded by a chill, this is to be looked upon with grave suspicion, as presaging pneumonia or general sepsis. On the other hand, a rapid fall of the temperature below normal indicates secondary hemorrhage or shock.

A pulse of 100 should put us on our guard, while a rate of 120 is indicative of infection. A rapid, feeble or intermittent pulse points to secondary hemorrhage.

If much blood is lost, infusion of physiological salt solution should be resorted to; also the foot of the bed be raised. For support, hypodermics of whisky, digitalis, strophanthus, and strychnine should be given. Of these, strychnine, in doses of 1-60 to 1-30 of a grain, surpasses all the rest in restoring the heart's action after shock or hemorrhage. It should be administered every twenty or thirty minutes, until the pulse improves in strength and rhythm.

The control of serious secondary hemorrhage may necessitate the removal of the dressing, reopening the wound, finding the offending vessel and ligating it. When the artery or vein cannot be closed by ligature, the hemostatic forceps may be applied, and may have to be left in the wound for several hours.

One of the most frequent symptoms following an operation is pain, the intensity and duration will vary with the character of the operation; being generally more severe where the tissues have been badly lacerated. In cases where the pain continues or comes on a few days after operation, we should suspect infection. This may either be a superficial or a deep-stitch abscess or a sloughing of some part of the wound. Severe pain immediately after the operation is often due to too tight bandaging and will disappear at once when loosened. This is more often the case after laparotomies than after other operations. When it does become necessary to give something to relieve pain, morphine should be administered hypodermically.

A few lines on the indication for a change of dressing may here be added. Our experience has taught us that it is proper to dress a wound when there is some good reason for so doing. These reasons are generally the following: (1) Saturation of the dressing with abundant discharge; (2) soiling of the dressing by urine, vomit or feces; (3) the removal of stitches or drainage-tubes; (4) pain, if owing to pressure or if of a pulsating character; (5) when secondary hemorrhage has occurred; (6) fever, if it points to some wrong in the wound; (7) if the dressing has been disturbed by a restless patient.

Frequent dressing, unless there are positive indications therefor, is sure to retard the healing process and to give the patient unnecessary pain, to say nothing of the danger of infecting the wound. Strict antisepsis should be observed at each dressing, just as much so as before or during the operation.

When no complications occur after operation and when union takes place by first intention, the first indication for a change of dressing will be to remove the stitches. Between the fifth and eighth day this can be done. In plastic operations on the face, the stitches can be removed as early as the third or fourth day. After laparotomies, the superficial ones may be removed on the eighth day and the deeper ones on the tenth day.

In dressing wounds, keep in mind that stitch-abscesses may form because the suturing-material has not been thoroughly sterilized. If any of these are discovered, remove the sutures at once, because they will be of no further service, while constituting a source of discomfort to the patient, and they may spread the infection to deeper parts.

Operations on the perineum and cervix require the most careful after-treatment. Constipation should be avoided in these conditions, because of the tension produced upon the parts.

I DOUBT whether anything in the world can beautify a soul more spontaneously, more naturally, than the knowledge that somewhere in its neighborhood there exists a pure and noble being whom it can unreservedly love. When the soul has veritably drawn near to such a being, beauty is no longer a lovely, lifeless thing, that one exhibits to the stranger, for it suddenly takes unto itself an imperious existence, and its activity becomes so natural as to be henceforth irresistible. Wherefore, you will do well to think it over, for none are alone, and those who are good must watch.—*Maderlinck*

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

EDITORIAL NOTE.—Doctor Gray continues this remarkable story of his adventurous and useful career in Mexico. In view of present conditions in that country, the installment following will be found especially interesting.

[Continued from page 54, January issue.]

The Revolution Versus the United States

IT SEEMS to me well to give a bird's-eye view of internal Mexico, as we pass along over the mystic haunts of this enchanted land. The political involvement now pending between the United States and Mexico should make this Latin-American country and its people peculiarly interesting to Americans, even those who have no material interest here, but rather a prospect of sending some loved ones down, for their unburied bones to bleach, in the marshes and barrancas, beneath the vertical rays of this pitiless torrid sun, should the intervention, at this writing (July, 1915) being discussed with the A-B-C republics at Niagara not turn aside that impending menace. And you all may readily guess with what suspense of bated breath we people in these hamlets of the mountain-*vales* await tidings of that vital issue, while rebels hover, like the poison-breath of a pestilence, not far away, rushing out ever and anon, to pillage, and to murder those radically opposed to their pretensions, and seizing others, to be held for ransom. These brigands burned a rather populous town, 12 leagues from where I write, a few days ago, where a federal garrison had been stationed for a long time, contenting themselves with the pillage of the place and flogging those whom they most abhorred, instead of hanging them, as usual, and taking a few to hold for ransom. This is a life such as we also may reasonably expect to see some fine day.

I have very little sympathy with the American side of the pending conflict, knowing the sinister part American money played in initiating the Madero revolution. While the government and the people at large were not directly responsible, they had permitted the development of trusts more powerful than the government itself, whose sinister ramifications enabled them to cover up any transaction against the peace of this country. This fact, coupled with the conquest of Texas and the Mexican war which Texas developed, embittered all classes violently against the Americans and the government of the United

States; and this hatred was fanned by serial histories of Texas and the conquest appearing in the public press of this country, while still more intensified by inflammatory editorials and declamations and private discussions; and, the worst of all, it was all, surely, unvarnished truth. And right along, on top of all the old scores that had been partly healed and mostly forgotten, almost open facilities were constantly granted the rebels, and actively continued till very recently, if not up to this moment.

Conditions Behind the Rebellion

The principle involved in the revolution may be right enough; were but the revolution supported by legitimate Mexico, and the course of the rebels not barbarously confrary to all law of civilized warfare and common humanity. The government of Madero was a fraud and a cheat, in such monstrous degree that those who made his revolution a success revolted against him, almost to the last man, ere his government was fairly on its feet. The counter-revolution against Madero was justified, from almost any political point of view. The disposition asserted to have been made of him, when a prisoner, is a somewhat delicate hypothesis—however, he never would have quit the country alive, under any state of circumstances. The inside facts of his death may ever remain shrouded in mystery; at any rate, the responsibility for it will be difficult to fix.

The revolted federal army was, at the time, the ruling power in Mexico, save where the rebels against Madero took issue against his vanquishers, so that the great majority of Mexicans had to support the new government, *noletens volens*. But the remarkable coincident was, that the conquerors of Madero had to wage war against those who were arrayed against him, not because he had been killed, perhaps, by a questionable method, but because they themselves desired to become masters of Mexico; patriotism with them was an absent principle.

The utopian ideal of a "liberal republic" in Mexico, with her antithetical conflicting elements and unscrupulous party leaders,

ever ready to embroil her anew in the anarchy of bloody antagonism, might as well be abandoned once for all by philanthropic peacemakers. A government for the people and by all the people of Mexico is an idle nightmare-dream, unattainable for many generations to come. What Mexico needs, and what the interested outside world should want, is, a government that can establish and firmly maintain the peace—not a task for the wearers of kid gloves.

Numerous doctors dream of blooming fortune leaping from practice down here—a delusion it were well for them to unteach themselves; for, American doctors who have not stood at their posts, through foul and fair of these dark and bloody times, will get the cold shoulder down here after the war is really over; and then the country will be so poor for a long while to come that the ration of the doctor will not be oversumptuous. Antagonism for Americans has never, at any time in the history of the two countries, been so intense as it is now. As I have been here for half a century and served alike the rich and the poor, caring for the sick and wounded federals as well as rebels who came to me, with the same scrupulous attention, without pay, I have not had the slightest other inconvenience to cross my pathway from either side, and little, if any, unpleasant tilts with private persons, amid all the vindictiveness felt here immediately after the occupation of Vera Cruz by American soldiers.

The Triumph of Rational, Positive Therapy

The most important monuments I have reared in vindication of the merit of modern rational medication—accessible to Americans—are the result of my work on two big American rubber-plantations, namely, the Santuario, in the state of Chiapas, and the Chicago, in the state of Tabasco—two death-holes for long years ere my little granules and tablets appeared, to cope with the angel of death.

I did not pass much time in personal attention in the Tabasco practice, but I elaborately and carefully instructed American intelligence what to do, and how; and the results, in establishing uniformly good health and, concomitantly, a low death rate, are too incredible to recount. However, I was at Santuario almost every day for a year and a half, till the conditions were such that there was nothing for a doctor to do there; and there has been no other doctor there since then—now three years—the health and the nominal death rate remaining unchanged. I have been there but once (for two hours) in

three years. There are, besides, several smaller native places that have adopted my system of medication exclusively, and some of which I have not visited in five years; nor has any other doctor been called to attend the people. Also, there are private families within a league of where I write who were calling me frequently ten years ago, but whom I never visit now, and am very rarely asked by them for any medicine for some trivial trouble.

Supported by the foregoing eventualities, I am satisfied that this most sickly belt on this continent might be converted into a state of healthfulness closely approximating that of the Blue Grass belt of Kentucky. There is an appalling average death rate in the district, mostly affecting vicious children, who die as the result of eating dirt, salt or tobacco, and whom no medication can cure. I do cure many by threatening to put them into the graveyard alive, even resorting to the extreme of sending a little coffin-like box to the house. If they can be frightened to abandon their vice, they become well and fat within three months, without other treatment; under which, moreover, they would die but the sooner if the vice were continued. But most of the parents of such children never say anything about the trouble until they are dead.

Many little children are killed by excessive doses of vermifuge, when they have fever, rarely a week passing that I am not asked for help in such cases; and I save many of those seen in time. Yet, that is the first thing done when a child falls ill with a dangerous fever, often as I have admonished everybody to let the worms rest till the fever-danger passes. Frequently they have no worms at all.

The death rate also is considerably augmented by the deaths of men in drunken broils; these nearly always being peons. Many persons gorge themselves with some imprudent food, such as cracklings or salt fish, or green fruit, this resulting in indigestion, congestion, a violent chill, and a fever that kills within a few minutes, even ere a doctor can be summoned. A man died thus only the other day within a hundred yards of my office, and ere his wife thought he was seriously ill.

My Efforts to Prevent Sickness

My sole aim, in this sickly belt—apart from treating the sick—throughout the last score of years of my practice has been, to improve the people's health, and it has been a dis-

couraging uphill task; yet, there has been substantial headway made.

The rubber-plantations are radically exceptional to family experiments, there being organization and discipline and administrative authority to enforce sanitary regulations on the plantations, the success of which was dependent on a high grade of average health. While the interest in establishing and maintaining family health should have been still more urgent, it was indifferently neglected in nine cases out of ten; maybe not entirely in any case, yet, to an extent that the care was too defective to be efficient. Possibly about one family in ten took a really strong interest, and then had the reward of escaping the annual taxation of big doctors' bills, such as they had been accustomed to pay.

The practical eradication of epidemic yellow-fever in Havana and Vera Cruz, and the almost normal healthfulness established on the line of the Panama Canal prove conclusively the possibility of extirpating the deadly malarial and pernicious fevers of tropical Mexico and the Latin Americas, as well as the backbone fevers of the Louisiana lowlands, under the rigorous supervision that secured such desirable results on the large scale just indicated. The task would be more herculean down here than in most other similar regions of the world, among a sparsely settled and imprudent people; yet, by no means impossible, when once put in vogue systematically, under the stern supervision of authority superior to the suasion of doctors.

Useful Concrete Water-Tanks

Galvanized iron roofs are becoming plentiful and steadily on the increase down here; while concrete building, that is now so extensively employed in the world, has simplified the question, long so difficult, of providing and keeping pure the potable water—a prime desideratum in the religion of health. The rain-water from such roofs is the purest in all the world. Concrete cisterns, covered with concrete lids, the water to enter from the roof through a fine strainer and the overflow covered with such strainer (to exclude insects) are practical, equal to jugs, and may be constructed of any desired capacity.

I have introduced the system here, having put one in connection with the roof and of a capacity of 1500 barrels. I built it round, making a mold of planks, in sections, adding two feet of wall at each pouring. I modified the standard proportions, in order to reduce the excessive quantity of cement and sand,

by adding stones, up to the size a man could conveniently handle. This I placed carefully into the mold, leaving a space between the stone and inside plank of some two inches, next carefully filled the vacant space with small stone, to the height of about a foot, then poured in liquid cement (2 1-2 parts sand and 1 part cement) until the stones were covered; then proceeded to fill in the other foot of the mold in the same way. After the concrete set, the form was raised. Thus, there remains an inward facing of two inches of pure concrete, and all the wall remains one solid stone, so perfectly the liquid cement permeates and fills the spaces between the stones. The wall is banded every foot with a 1-4-inch round steel rod, fastened in a species of steel ladder built into the wall, as it ascends, said ladder coming in sections, properly drilled for holding the rods. The rods should be covered with cement when the wall is finished.

Metal molds, 14 inches high, and metal roofs, constructed so as to receive the cement, used for building silos, but suitable for building cisterns, are listed in the big catalog of Montgomery Ward & Co. of Chicago. These are less expensive than lumber in America, and many different persons could use the same molds. I did not procure these, because of the heavy freight and duty. I refaced the wall inside with the cement and sand mortar, thus securing a perfectly smooth stone face. A pipe was built into the wall, at the bottom, to which water connections were attached. I put in piping to water a 2-acre garden.

For a long time I have furnished families all their drinking-water, where there was fever almost continually before, but where months have since passed without a single fever case, while the general health seems improved otherwise. I have the water in my house, kitchen and bath, from the tank pressure; quite a comfortable convenience.

Doctors and their patrons might benefit themselves from this expensive experience of mine (cement here costing \$7 gold a barrel, and sand, \$2 a barrel—comparatively cheap), where water is bad, as in many sections of the southern states. There is no longer any question about impure water being an element of infection; maybe we do not know even to what extent. A big family across the street from me has been in the house two years, and they never were without fever the first year. The last year all their drinking-water has been taken from my tank, and they had not more than four cases of fever not one of which continued three days.

What Others are Doing

PITUITRIN FOR PROMOTING PARTURITION

E. Vogt, of Dresden (*Zeit. f. Geb. u. Gyn.*, Bd. 76; cf. *M. M. W.*, April 27, 1915), after a large clinical experience, maintains that there are no contraindications to the use of pituitrin in labor, not even the existence of nephritis, eclampsia or cardiac affections; none, except the one condition of a danger of rupturing of the womb, from forced contractions. Altogether, the author terms pituitrin "the best of all labor-pain incitants." He has found it particularly valuable in the presence of a narrow pelvis, and many a time it has rendered the forceps superfluous. Likewise pelvis-dilatation operations have lost much of their danger to the child. Hemorrhages before and after delivery are indications for pituitrin.

BIOLOGIC DIAGNOSTIC TEST FOR SMALLPOX

G. Jochmann asserts (*Virch. Arch.*, Bd. 216, H. 3) that he considers the diagnosis of variola positively established if, two or three days after the serum from a suspicious pustule has been inoculated into the eye of a rabbit, Guarnieri's bodies can be demonstrated.

OCCULT BLOOD AS A DIAGNOSTIC SIGN IN RENAL CALCULI

Eichhorst calls attention (*Zentbl. f. Inn. Med.*) to the importance of looking for occult blood (hemic pigment-cells—large round cells containing pigment) in the urinary sediment when suspecting the presence of calculi in the renal pelvis. These pigmented cells are transformed colorless cells.

ALCOHOL INJECTIONS FOR PRURITUS ANI

Having observed the lasting benefit following injections of alcohol in persistent neuralgic conditions, Harvey B. Stone (*Md. Med. Jour.*, Aug., 1915, p. 202), has given alcohol a careful trial for pruritus ani. Alco-

hol, 70 percent, is injected, with an ordinary hypodermic syringe, well through the skin into the area to be treated, being deposited directly under the skin, until the entire affected area has been infiltrated. The needle is never plunged in deeply, on account of the danger of causing paralysis of the motor nerve and loss of sphincter control.

This method of treatment has been very successful in Doctor Stone's hands. The results are obtained quickly, no dressing, stitches or other postoperative annoyance are required, and the effects are likely to be enduringly satisfactory. The injection causes intense pain for one or two minutes only before sensation is lost, but this may be prevented by a light general anesthetic or by preceding the alcohol injection with that of some local anesthetic. No subsequent treatment is required.

CONCERNING THE ETIOLOGY OF EDEMA IN NEPHRITIS

In opposition to the prevailing conception, according to which the edemas of nephritics rest upon an incapacity of the kidneys to separate the water, evidence is accumulating that at times extrarenal factors are the sole cause of fluid retention. The proof for this lies in the now sufficiently established fact that, in the presence of a nephritis, water drunken may be retained, while it is renally eliminated when introduced into the veins. The observations in this direction published by E. Magnus, of the Clinic of Wuerzburg (*Muench. Med. Woch.*, Sept. 22, 1914), as also those of Volhard, are of highest interest and carry conviction; and these, together with related ones, indubitably tend to demonstrate that certain particular functions of the kidney may be deranged, without affecting its activities as a whole.

In 1903 (and subsequently), Magnus points out, Gerhardt showed how in cases of acute (scarlatinal) nephritis sodium-chloride retention can be present, but, yet, this salt may promptly be eliminated when directly introduced into the circulation. Furthermore, Gerhardt demonstrated a divergence in

the time factor, in that the salt (ingested) retention lasted perhaps one or two days, while the albuminuria and cylinduria continued for weeks, with occasional nonrecession of increased residual nitrogen (rest-N) and abnormally diminished freezing-point, even though all uremic symptoms had disappeared for weeks.

Of still greater importance are more recent observations regarding the formation of edemas. A few years ago, von Nonnenbruch (*Arch. f. Klin. Med.*, 1913, p. 162) told of a case of edema when water excretion was intact; the underlying trouble, however, being decompensated heart action. Still, in another instance reported by Volhard ("Bright's Disease of the Kidney," Berlin, 1914), a similar condition directly involves the kidneys.

Edema, according to Volhard's views—based upon observations—is not a consequence of renally conditioned salt retention, but, rather, exclusively of a functional disturbance of the capillaries. Diminished ability of the kidneys to separate the water, this writer argues, merely leads to a retention of the fluid in the blood-vessels—intravascular water accumulation, or, a hydremia. On the other hand, edema is the result of extravascular water retention, the effusion of blood-water into areolar tissue. The demonstration of this is simple.

The patient drinks, at once, a large volume (say, 1 liter) of water. This failing of excretion, the kidneys may be at fault (intravascular retention); however, the fluid may, possibly, be retained somewhere else in the system and, thus, not get to the kidneys (extravascular retention). As a critical test, inject, at a subsequent time, a comparatively large volume (800 to 1000 Cc.) of physiologic salt solution into the veins, when it is sure to be carried directly and instantly to the kidneys.

This latter procedure definitely settles the point; for, if there is no renal insufficiency, urine soon will appear in proportionate amounts, thus disproving the accepted notion that nephritis necessarily makes the organs incapable of secreting. However, the kidneys may positively be inculpated only when results are negative after the introduction of water by both methods, by mouth and later intravenously.

So far the author's—Doctor Magnus'—review of the situation, but he also has instituted experiments of his own, leading to the same conclusions; one of these referring to a woman suffering from acute nephritis. And

the results are striking. Related in few words, the facts are these:

The patient was given 1 liter of tea to drink, at once. Of this amount of fluid, 290 Cc. was excreted by the kidneys in the course of six hours, having a specific gravity of 1014 and a sodium-chloride content of between 0.28 and 0.36 percent.

At the second trial, 800 Cc. of normal salt solution was injected intravenously, with the following result: Urine voided (time: from 1 p. m. to 6 p. m.): After 2 hours: Cc. 350—sp. gr. 1016—NaCl 0.55 percent. After 5 hours: Cc. 550—sp. gr. 1017—NaCl 0.58 percent. Thus, a total of 900 Cc. of urine was eliminated inside of five hours, as against less than 300 Cc. in six hours.

Still, while nephritic kidneys have been demonstrated not necessarily to be incapacitated for secreting urine in proper amounts, this condition must not be taken for granted; for, the author encountered one case, that of a woman afflicted with chronic nephritis, in which neither the introduction of water by mouth or intravenously caused increase in the amount of urine. Here, then, there was a positive renal insufficiency accompanying nephritis.

Doctor Magnus mentions another observation in this connection. In a woman suffering from contracted kidney, associated with a light diffuse skin edema, there occurred a mild conjunctivitis, and in conjunction with this the existing edema of the skin took on an inordinate character as to severity and extension, altogether disproportionate to the conjunctival inflammation. With the recession of the latter, the severe edema likewise went down again. Supposedly, the eye trouble incited the aggravated edema.

From all of which it appears—to repeat—that in dealing with nephritis one must also consider factors lying outside of those organs.

SOME NEW IODINE SYNTHETICS

Sanasclerose is being recommended by some German physicians as a desirable form for administering iodine, in arteriosclerosis particularly. The tablets contain (*Ther. Monatsh.*, 1913, No. 1) potassium iodide, lecithin, iron, and so-called tissue-salts.

Iodostarin (Roche) is recommended as a desirable substitute for the alkali iodides. Its advantages are claimed to consist in an absence of disagreeable taste, and particularly that its continued use does not lead, unless exceptionally, to the unpleasant phenomena of iodism.

Lipoiodin, an organic iodine compound with a fatty body, presumably lecithin, is a new French synthetic, and is put out, with doctors' certificates (e. g., N. Ribollet, in *Jour. d. Med. Pract.*, 1912, No. 10), as a superior remedy in arteriosclerosis, exophthalmic goiter, actinomycosis, sporotrichosis, syphilis in its several stages, etc.

"Radioactive" iodomenthol is being highly praised by G. Dromard, Paris (*Zentralb. f. d. Gers. Ther.*, 1912, No. 30), in the psychoses of tuberculous patients, where there are gastric intolerance and pseudo pertussis attacks. Neisser and others express doubts as to the claims made for this new remedy.

CLASSIFICATION OF SAPONINS FROM THE CLINICAL STANDPOINT

According to that eminent pharmacologist, Professor Kobert, of Rostock (*Riedel's Archiv*, Mar., 1914), the principles known as saponins cannot be considered a strictly chemically allied group; inasmuch as some of them exhibit a neutral and others an acid reaction (to which, moreover, Heubner, of the *Therapeutische Monatshefte*, is inclined to add alkaline members, naming solanine); while holding that all of them being glucosides is not at all a certainty as yet.

However, the one characteristic joining all the saponins, so called, consists in their hemolytic property and peculiar action upon fishes.

TREATMENT OF SOME PHASES OF VENEREAL DISEASES

A. Blumenfeld tells of the successful management of certain phases of venereal diseases in the Austrian army in the field, from which (*Wien. Med. Woch.*, 1914, p. 2473) we briefly abstract his statements anent a few conditions. Incidentally, this Red Cross surgeon seems greatly enamored of aluminum acetate for a variety of external lesions.

Gonorrheal *epididymitis* the author combats with compresses wet with aluminum-acetate solution and the application of heat—for which purpose he employs sacks filled with hot sand. Occasionally heat cannot be borne, when ice generally proves grateful. As a rule, vaccine-therapy proves disappointing in this affection; however, it may be given a trial in otherwise obstinate cases.

Inflamed prepuce, in connection with gonorrhea, yields to embrocations with solution of aluminum acetate. At the same time, the penis is to be fixated upward against the

abdomen. The bandages are removed while the patient sleeps.

Buboes—inflamed inguinal glands—may, as a trial measure, be treated by applying hot-sand-bags. In place of lancing, when pus has formed, it may be aspirated with a hypodermic syringe.

Ulcus molle—soft chancre—is thoroughly irrigated with hot water, then swab with a glass rod dipped in pure carbolic acid, and wind up by covering with iodoform-gauze; the latter being changed three times a day. The more costly odorless substitutes for iodoform may be ignored.

Gonorrheal joint affections are amenable to vaccine-therapy (in fact, this absolutely is indicated), and without exception does good. As in the case of multiple folliculitis, Blumenfeld has recourse to the commercial polyvalent vaccines.

Without attempting an explanation of his observation, the author finds one single injection of a sufficiently large count to effect a cure; but, if this does not follow, then also a systematic vaccine-therapy will fail. While the dose he employs is determined by a given patient's condition of health, it ranges, ordinarily, somewhere between 2 and 3 cubic centimeters of his favorite polyvalent vaccine.

SULPHUR AS A PROTECTIVE AGAINST PEDICULI VESTIMENTI

During the past year, comparatively much space has been devoted to the subject of pediculosis, with special reference to the extermination of body-lice, and, yet, it is absolutely as nothing in comparison with the huge volume of the literature on this subject encountered in the medical and allied periodicals published in Germany and Austria-Hungary—not to mention the other belligerent nations. And, really, this problem of insect-pests is looming large in the domain of sanitation, since their agency as spreaders of disease is becoming more and more recognized. This knowledge already has greatly influenced medical practice, and our views regarding quarantining and the use of preventive disinfection, and further research promises almost completely to revolutionize the management of all zymotic diseases.

Naturally, the connection between typhus and recurrent fever and the body-louse has held the attention of medical men in the present war, with its unusual conditions; but, we here may deem that subject too remote for us to get interested in. This, though, is too narrow a view, for, the entire

problem is as yet an open one, nothing has been definitely settled, discoveries in one direction necessarily must affect research in other directions, while, moreover, no one can foretell what may befall ourselves with reference, in particular, to typhus fever. Hence, prolixity in this domain of parasiticides does not seem to call for any attempt at justification.

So, we find in the *Muenchener Medizinische Wochenschrift* for April 20, 1915, a supplementary note contributed by Geh. Sanitätsrat Dr. Eysell, head physician of the war-college at Kassel, in which precipitated sulphur is recommended as a *prophylactic* against body-lice. "Effective means for getting rid of body-lice," he writes, "we for long have known many, but (as I have said in previous essays as well as in my article, 'Die Krankheitserreger und Krankheitsuebertraeger Unter den Arthropoden,' in Mensel's 'Handbuch der Tropenkrankheiten,' 1913) reliable agents acting as protectives against lousiness we until now have had none." Having been generally misunderstood on the point of prophylaxis versus cure, and his advice having found little heed, Eysell once more repeats his contention, adding the warning that much depends upon a correct procedure.

To begin with, the material to be used is the precipitated sulphur, not the flowers of sulphur; and this because the latter is not a sufficiently fine powder, while the sharp crystals irritate the skin. On this score, an acquaintance suggested to the author the use of the extremely finely divided colloidal sulphur marketed as sulfidal; however, this was not any more effective, while its price virtually is prohibitive. And all that is necessary is, that the garments next the body are thoroughly impregnated with the sulphur powder. The reason for this procedure, and also why the use of, for instance, sulphur-unguents (which, besides, are filthy) will not serve, likewise is set forth by Doctor Eysell.

The habitat of the body-louse is not, regularly, the skin of the host, but, rather, it sojourns in the vestimental covering of the person, and, in order to feed, the parasite protrudes its proboscis, and thus sucks its blood-meal while safely ensconced between the threads where they cross each other in the weave. Hence, the systemic designation, *pediculus vestimenti*, and "Kleiderlaus" (garment-louse) in German. This fact, further, explains in part why they congregate largely in those spots where the garments fit the

body closely. The importance of vestimental coverings of the body to the wellbeing of this parasite is seen when we are told by Professor Zlatogoroff ("Pathologie und Therapie") that observation has revealed that typhus-fever never attacked the naked negroes carried on the slave-ships, although they were fully subject to the other prevalent maladies. This long before the modern scientific discovery of the reason why.

In practice, the body-garment is turned inside out, some of the precipitated sulphur is loosely, but liberally, sprinkled over a small smoothed-out area, and then the powder is evenly rubbed into the texture of the fabric. Proceeding thus from spot to spot, the entire garment is liberally impregnated with the pediculifuge. Or, a small bag, made of two thicknesses of mull, is half-filled with the sulphur, and then the garment is pounded with it—very evenly, of course—following this with the brush, if desired. Also, a good powder-blower may be made to answer. Of course, socks, abdominal band, and neckwear must be equally treated. Plainly, impregnation of outer garments is useless. Ordinarily, a well-applied loading of sulphur will last about four weeks, although in the case of sweaty persons the process may have to be repeated every two weeks.

It seems supererogatory to add that anybody about to enter an infected region should protect himself in this manner before nearing the same; and this should apply to satchel, trunk, and knapsack, and the like.

Maybe the same encasement might prove serviceable against fleas and even bedbugs. Sulphur is less undesirable than insect-powder and larkspur. Experiments in this line, whether successful or otherwise, should be reported for the benefit of the "family."

AROMATIC SACHETS AS A CURE FOR PEDICULOSIS

To revert once more to the "lively" subject of body-lice, about the simplest and very best measure for getting rid of these purveyors of deadly diseases is proposed by S. Gross—who, indeed, deserves a monument if his contention proves true. This physician, at a meeting of the Medical Society of Vienna, made the assertion (*Muench. Med. Woch.*, Apr. 20, 1915, p. 552) that, in order to get completely rid of these parasites, all that is necessary to do is, to wear an aromatic baglet on the chest and between the shoulders. The lice, he declared, quickly will desert the wearer, while the young ones hatched from

the nits in the clothing perish from starvation. The nature of the oils is not indicated, but, we now know that anise, fennel, and clove have proved most effective. A little doubt arises when one reads that the speaker has honored this pediculifuge with the baptismal name of "texan" (not with reference to Texan lynchings, but derived from Latin "texo," "textile"); also, that these oils are "fixated" by the admixture of resinous substances and others of the ketone and aldehyde group, which tend to reduce the tension, hence, volatility, of the ethereal oils. The body of texan is talcum powder.

At the same session, S. Fraenkel stated having, by accident, discovered the powerful pediculicide action of anisol (not anise-oil), that is, methylphenyl-ether, a harmless substance obtained by methylizing phenol. It kills lice in ten minutes. However, B. Nocht and J. Halberkann have stated later that this substance leaves much to be desired and is excelled by the cheaper cresyl preparation.

The two authors last named (*loc. cit.*, No. 18), after carefully testing numerous methods, give the palm to p-dichlorbenzol, both for killing and keeping off lice. They put a Gram of it into little bags, left open, and distribute them in the bed, while the subject attaches them at various portions of the body—groins, armpits, neck, waist, and so on. It is promptly effective, while entirely harmless; but, being quite volatile, it must be renewed every few days. For bedding and clothing, they also use it in the form of a (very fine!) 10-percent spray, as follows: 10 Cc. dichlorbenzol, 43 Cc. burning-spirit, 43 Cc. carbon tetrachloride; 4 Grams green soap. The latter, to retard dissipation. It produces no unpleasant effect worth mentioning.

P-dichlorphenol ($C_6H_4Cl_2$) is a volatile solid having a mild, not disagreeable odor, and has been exploited, under the name of "globole," as a moth-exterminator. It is at present quoted at 1.80 marks, in ordinary amounts. Nocht and Halberkann are in charge of the Institute for ship and tropical diseases at Hamburg.

ATROPINE-THERAPY IN VAGOTONIA

G. Lehmann, of the Virchow Hospital at Berlin, has been making observations in 100 cases of disturbances of the vegetative nervous system, testing the reaction to adrenalin, pilocarpine, and atropine, the results of which he has published in the *Zeitschrift fuer Klinische Medizin* (Bd. 81,

H. 1 u. 2, Cf. *Muench. Med. Woch.*, 1915, p. 440). One observation made is, that the young are more sensitive to pilocarpine and adrenalin, while older persons show greater susceptibility to atropine. Another noteworthy conclusion, therapeutically, is this: Atropine many times will fail in vagotonic subjects; nevertheless, improvement has followed in a sufficient number of such patients as to warrant a trial with this remedy in appropriate cases, and, if benefit is seen from its use, to institute a vigorous and prolonged atropine-therapy.

SIMPLE WAY OF PREPARING BLOOD-SERUM

Doctor Rosenthal, of the military hospital of Goettingen, obtains larger amounts of blood-serum for laboratory purposes by the following simple procedure (*Muench. Med. Woch.*, Jan. 5, p. 30): Set the freshly drawn blood for one hour in the refrigerator, then, with a sterile platinum wire loop loosen the blood-cake from the sides of the glass tube, so that the lump is freely movable as a whole; again place the test tube with contents into the refrigerator, and then the blood is ready for centrifuging.

PURPURA HEMORRHAGICA TREATED WITH EMETINE HYDROCHLORIDE

Another interesting use for emetine hydrochloride has been found in the treatment of purpura hemorrhagica. A case of this kind is described by James C. Cole and Percy L. Querens in *The New Orleans Medical and Surgical Journal*, January, 1916 (page 473). The patient was a farmer, 52 years of age, who entered the Charity Hospital, New Orleans, on September 11, complaining of bleeding from the gums and reddish-blue spots on the body. The family history was negative.

His illness began on September 7. While working in the field he became dizzy, but not unconscious. He thought he had some fever. The next morning he noticed a small red spot, about the size of a dime, on the left shoulder. During the succeeding two days he felt better, but on September 11 he noticed that the gums at the margin of the superior incisor teeth were red and blood was oozing from them. He consulted a dentist, who scraped the teeth, but the bleeding continued. Soon after, small reddish spots appeared on the right forearm, these turning to reddish-blue by midday. A little later,

as blood still oozed from the gums, the teeth were scraped again and an astringent applied, but the hemorrhage continued, and reddish spots appeared on the chest, abdomen, thighs, arms, and legs.

Upon examination at the hospital, the most striking feature was bleeding from the gingival margin, the ecchymotic area extending almost to the frenum. When the patient held his head in the right position, the blood would drip from his mouth into a basin at the rate of 40 drops per minute. The gums on both margins showed advanced pyorrhea, and on the right edge of the tongue, near the tip, there was a small ecchymotic spot, the size of a pea. Examination also showed a large number of bluish-red spots, irregular in shape, ranging from the size of a twenty-five-cent piece to that of a dollar, covering the chest and abdomen, while the arms and thighs were covered with purpuric spots of smaller size, and the forearms and legs showed numerous petechiae, pinhead in size and larger. The vital organs were found to be sound, and the urine negative, except for a few hyaline casts and red blood corpuscles.

Application of glycerite of tannin was made to the teeth, but without effect; then a 1 : 1000 solution of adrenalin chloride was substituted, which seemed to alleviate the condition slightly. Calcium lactate was given in 15-grain doses every four hours, but without effect. Thereupon emetine hydrochloride was administered intramuscularly, in a 1-2-grain dose. Almost immediately a hematoma formed at the site of puncture. The same result followed when it was injected into the other arm, eight hours later. The physicians now began intravenous administration of the emetine, 1-2 grain being given directly from the ampule, undiluted, into the median basilic vein. Only a slight ecchymotic spot formed at the site of puncture, and accordingly the injection was repeated six hours later.

The following day improvement was noticed in the condition of the gums, and the number of ecchymotic spots on the skin failed to increase. Accordingly, the drug was continued in the same dosage, twice daily, being injected intravenously alternately into the right and left arm. This treatment was continued until ten doses were given.

Improvement seemed to be almost immediate. The disease ceased to spread; the patient's general condition improved; he felt better, and at the discontinuance of the treatment all symptoms had absolutely disappeared, so that on September 21, 10 days

after admission, the patient was able to leave the hospital, showing no signs of the original condition, while the pyorrhea manifest on entrance appeared very much improved. After the second day the temperature did not rise above 98.4° F. and the pulse 86.

ARREST OR PREVENTION OF GANGRENE OF FROZEN OR CRUSHED FEET

Gangrene (mortification, necrosis, death of the tissues) is a direct result of a failure of nutrition, following obstruction of regular blood supply. One instance of this is seen in crushed hands and feet, where the digits may be hanging on by only a strip of vitalized flesh. A very successful procedure for preventing traumatic gangrene under such circumstances was introduced a few years ago by Noesske (*Muench. Med. Woch.*, 1909, p. 2419), who relieved the stasis and restored circulation by incising the tips of the fingers or toes.

Now, since frozen feet and hands were of such frequent occurrence among the European armies last winter, the idea came to at least two physicians serving in German field lazareths to apply Noesske's approved treatment in cases of that nature; and it so happens that reports on these experiments appear side by side in the *Muenchener Medizinische Wochenschrift* (Prof. Arnold Wittek and Dr. Eduard Bundschuh, 1915, p. 416), the results in both hospitals having proved eminently satisfactory. A reference to these articles seems opportune.

Noesske's procedure for preventing traumatic necrosis of the nature referred to consists in making an incision, parallel with the nail and down to the bone, clear across the finger-tip, that is to say, and to the width of the terminal phalanx; also, similar slits up to 1 cm. in length are—or may be—made lengthwise on the sides of the digit. The idea is, that, the clogged obstructing veins now being out of the way, the centrifugal pressure in the arteries can then force fresh blood into and through the parts—the vivifying, nutrient blood current finding an escape out of the severed arterioles (bleeding).

Now, in the case of frozen (third degree) feet and hands, it is reasoned, the cyanotic discoloration occurs because the veins no longer carry away the devitalized blood, although for a while arterial blood continues to be pumped into the parts. In consequence, the parts become distended, and at last the arrested arterial blood also becomes

venous; whereupon, circulation having ceased, the tissues begin to die off.

However, the latter disaster—mortification—can be obviated if, as above indicated, the stasis in the terminal arteries and arterioles is relieved by affording the opportunity for the vitiated blood to be forced out and fresh fluid to flow through and nourish, and thus to keep alive, the tissues. From this, it is plain that the operation must be performed at the earliest possible moment, if it is to be crowned with success. These incisions, it hardly need be mentioned, cause no pain; hence, anesthetic measures are not called for.

As a rule, blood will not issue immediately after the incision has been made, at most "a droplet of dark fluid oozing out"; although, when the accident is of very recent occurrence, a little venous blood may, possibly, start to ooze out pretty soon, which then will grow in volume and eventually become arterial. However, Doctor Bundschuh states, this will happen only in superficial and absolutely fresh cases of freezing. Moreover, in one instance, that writer believes, restoration of the circulation was accelerated by massage of the frozen finger from the knuckle toward the tip. When, however, hours have passed—as mostly happens—stasis is complete and no blood whatever will come from the wound: then further measures must be adopted.

Under these circumstances, in order to prevent drying, with consequent closing up, of the wound surfaces, Bundschuh inserts tampons of gauze saturated with sterile oil (preferably camphorated), and then proceeds to draw the blood by means of suction. For the latter purpose, he employs finger-suction-cups or, when more than one finger is involved, a hand-suction-bell, applying not too great pressure. After from five to fifteen minutes—if the operation is successful—the tamponed wounds may be expected to begin to show a little dark blood, which, under continued suction, increases in amount and has a brighter hue; and, slowly, the cyanotic member assumes a more pinkish color. If now the suction-cup is removed, the bluish hue of the member is likely to reappear; nevertheless, the wound will continue to bleed slowly.

In like manner, each digit is treated in turn, while the suction-cups are to be re-applied as often as seems advisable, and on successive days for as long as need be. Of course, the oily tampons are renewed whenever necessary. Then, when gangrene thus

was shown to have been averted, sometimes the members were bathed in lukewarm water, which favored bleeding, but less profuse than did the cupping.

The same author did not always consider it imperative to cut to the bone when the damage was a superficial one, often more superficial incisions sufficing; still, in the more threatened finger-tips, deep incisions always are advisable. Obviously, he adds, these tamponed cuts across the finger-tips leave disagreeable scars; still, a person rather will take these blemishes into the bargain than lose his fingers or toes. Under his supervision, totally necrotic digits were severed only when demarcation had become fully established.

Bundschuh supplies no statistics; Wittek, though, gives these figures for the *étappe* hospital under his charge: total of men treated who had some member frozen, 434; namely: frozen feet, 412; frozen hands, 9; hands and feet, both, frozen, 12; frozen ear, 1. While here we find mention of one instance of frozen nose (although no statement as to outcome is made), the other author encountered neither frozen noses nor ears, but, still, expresses full confidence in the value of his method of treatment.

As to details, beyond the cutting, Wittek does not mention either suction or warm bathing; in fact, says nothing about the difficulty in establishing flow of blood from the wound; but, he does say that directly after making the incision he applied collargol and, after the third day, some "indifferent" unguent—the text leaving to infer that he did nothing else. Possibly his cases principally were of a mild type, but, also, his complete successes seem to have been fewer, as indicated by the amputations.

Wittek also followed Noesske's method, but, in addition, made from 2 to 4 longitudinal incisions on the top of the foot, from the proximal limit of the discolored skin up to the basis of the toes. Sometimes he cuts similarly along the plantar aspect. The beneficial effect, he relates, became evident within twenty-four hours; the bluish-green discoloration and "glassy-cloudy" infiltration of the foot disappearing and the already indicated zone of demarcation moving distally toward the toes. Not once did it become necessary to amputate higher up than at the middle of the metatarsi, and then only twice in extreme cases. In the others, only toes, in part or wholly, were lost.

Various individual deviations from these types need not here be repeated. On the

whole, phlegmonous complications never occurred; victims brought in in a fevered state quickly became defevered, the necrotic auto-amputations leave a smooth, healthy, remarkably small granulating surface, and, altogether, this new method of treating frozen feet and hands has proven a preventive of many otherwise deplorable mutilations.

INTRAVENOUS INJECTIONS OF DIPHTHERIA-ANTITOXIN PREFERABLE

As theoretically probable and actually recommended by Rausch, more certain and rapid results are obtained from the administration of antitoxin-serum, for the cure of diphtheria, by injecting it directly into the veins, instead of intramuscularly, as is customary. This assertion is made (*Jahrb. f. Kinderh.*, Bd. 80, H. 3; cf. *Muench. Med. Woch.*, Jan. 5), by K. Alber, of the Hospital for Children at Bremen. Park of New York, holds the same opinion.

CHARACTERISTICS OF MYASTHENIA

Myasthenia gravis pseudoparalytica, also known as asthenic (bulbar), paralysis, is a still unexplained peculiar intense muscular debility attacking, more or less acutely chiefly young persons, and the clinical picture of which is referred to as the Erb-Goldflamm symptom-complex. While the affection is somewhat rare, the description of a striking case may be of interest. The patient in question was presented before the Medical Society of Erlangen by Doctor Koeniger, whose remarks we abstract from the *Muenchener Medizinische Wochenschrift*, 1914, page 2314. The subject is the 20-year-old daughter of a laborer.

Some fifteen months before, the young woman observed a slowly progressive tendency of her upper eyelids to droop, and gradually this muscular relaxation extended to arms and legs. Eventually there was developed decided palpebral ptosis, external ophthalmoplegia, and a masklike rigidity of the facial muscles; also, the muscles of the trunk, limbs, and (particularly) neck, shoulders, hips became very quickly exhausted, while the diaphragmatic and intercostal muscles exhibit a continuous highgrade weakness.

Early in the day, the patient is capable of walking alone and raising her arms, but fatigued rapidly, and after slight exertion it advances and attains to complete paralysis-like relaxation of all the muscles.

In the face of this severe condition, there is observable no atrophy, no degeneracy-reaction, no disturbance of sensation, no pain; further, there is present no hypertonia, and reflexes of the skin, mucosae, bladder, and rectum are normal, although occasionally the Babinski toe-reflex is elicited.

Before the attack and in its first stages, the patient knew of no nervous disturbances, but from early childhood up to her fifteenth year she was troubled with cough and oppressed breathing, these attacks occurring [in puberty?] quite regularly every four weeks, and then for a few days running would cause aggravation. The author surmises thymic asthma. Catamenia appeared for the first time in her nineteenth year, then did not again show for a year; since then, though, have been fairly regular.

The blood exhibits a mild lymphocytosis. A diseased state of the endocrine glands cannot be demonstrated clinically, especially do we possess no certain sign for thymic enlargement. For all that, the author is convinced of a definite correlation subsisting between myasthenia and the internally secreting glands, in particular, the thymus and the parathyroid bodies.

Unfortunately, precisely with reference to the thymus the Abderhalden reaction is as yet inapplicable. Still, it is noteworthy that, after subjecting the thymus of this patient to the influence of the Roentgen-rays, a marked improvement of the myasthenic symptoms could be recorded.

Electrical treatment produces an intense myasthenic condition; however, in the author's opinion, this differs merely quantitatively from the fatigue-reactions occurring in other persons, especially the juvenile forms of "nervous" asthenia. Yet, this very fact may aid in tracing the etiology of myasthenia.

MILK AS A SOLVENT FOR SODIUM CHLORIDE

According to Stewart (*Amer. Med.*, Aug., p. 622), when normal saline solution is indicated and proctoclysis is to be applied by Murphy's drop-method, the ideal solvent for the sodium chloride will be found to be milk rather than water. Not only is the salted milk more readily retained within the rectum than the aqueous solution, but it has a very decided antihemorrhagic action, owing to its power of increasing coagulability. In bad cardiac conditions particularly, when hemorrhage is to be avoided, very happy results

frequently are obtained by the injection of a quart of salted milk into the lower bowel.

THE CAUSES OF INDIGESTION

A very interesting study of the histories of 1000 consecutive patients who presented themselves for the relief of chronic or recurring indigestion was submitted by Douglas Vanderhoof in *The Bulletin of the Johns Hopkins Hospital* for May (p. 151). This report embraces only patients whose chief complaint was of some disturbance of digestion. Each of these patients was carefully studied, the history of his complaint secured, and a complete physical examination and the necessary laboratory analyses were made.

The table prepared by Doctor Vanderhoof shows the causes of indigestion to be about as follows: appendicitis, 24.6 percent; cholecystitis, 11.7 percent; various neuroses, 10.1 percent; cancer of the stomach and intestine, 5 percent; chronic gastritis, 3.6 percent; affections of the kidney, 7.1 percent; of the lungs, 2.8 percent; of the heart, 2.3 percent; of the eyes, 2 percent; visceral ptosis, 3.4 percent.

The most striking fact evidenced was the large percentage of cases in which two surgical diseases, appendicitis and cholecystitis, were the underlying causes of the indigestion, and the small percentage of those in whom actual disease or disorder of the stomach was found to be present.

SURGICAL OPERATIONS IN CARDIAC CASES: SOME SUGGESTIONS

When it is necessary to operate upon patients suffering from a cardiac defect, the greatest complication to be feared, remarks Douglas H. Stewart (*Amer. Med.*, Aug., p. 622), is syncope. Consequently, the physician should be prepared to forestall fainting under such circumstances, Doctor Stewart lays special stress upon the importance of maintaining the respiratory function at its full capacity. As he points out, the heart is only part of the circulatory mechanism, the lungs being of equal importance with the heart.

Interference with respiration is one of the things to be considered first as a possible complication when making unusual demands upon a badly damaged heart. This interference begins at the nostril, which is the true intake for the air. To keep the nostril readily permeable, Stewart suggests the use of a few drops of adrenalin-solution, because of its

power of contracting congested mucous membrane; and he adds that it is a pleasant surprise to see the improvement in the color of the face and the character of the pulse following the application of this simple expedient.

The adrenalin may readily be applied by the anesthetist with a dropper or swab. Sometimes it is desirable to free the nostril by the application of cocaine, before the operation, maintaining action by means of an antipyrin-solution.

ON THE ABSORPTION OF BACTERIAL TOXINS

R. Kraus and B. Barbara, of Buenos Aires, have been conducting several series of experiments with animal charcoal as a remedy in various zymotic diseases, notably diphtheria, tetanus, and rabies. They have demonstrated (*Deut. Med. Woch.*, 1915, No. 14) that this agent acts by absorbing the toxins engendered by the pathogenic bacteria; hence, its remedial value, as proven, in cholera and dysentery.

DAKIN'S CALCIUM HYPOCHLORITE SOLUTION

Since publishing the formula used by Carrel and Dakin, as well as by others, for the manufacture of sodium-hypochlorite solution, we have received from some of our subscribers inquiries as to how this preparation is made. For this reason, we reprint herewith the directions given by Dakin for the preparation of this solution:

140 Grams of dry sodium carbonate or 400 Grams of the salt in *clear* crystals (washing-soda) is dissolved in 10 liters of water, and then 200 Grams of perfectly dry chlorinated lime (improperly called chloride of lime) of full standard quality is added. (Only that sold in sealed cans should be chosen.) The mixture is well shaken, and after half an hour the clear supernatant liquid is siphoned off from the precipitated calcium carbonate and filtered through a plug of absorbent cotton. In the clear filtrate, 40 Grams of boric acid is dissolved, when the resulting filtrate is ready for use. A slight additional precipitate of calcium salts may occur slowly, but this is of no significance. This solution should not be kept longer than one week, at the most, since it rapidly deteriorates.

Already ready-made preparations of this antiseptic solution (or at least a very similar

one) are being offered for sale in England. No doubt American manufacturers will put something of the kind upon the market before very long.

NITROUS OXIDE THE SAFEST VOLATILE ANESTHETIC

There is no longer any question, if Dr. Charles S. Skaggs is right—as set forth in his paper in *The Lancet-Clinic* for September 18, 1915, page 247—that nitrous oxide, when administered in association with oxygen, is the safest of our volatile anesthetics, provided it is given by an experienced anesthetist. Doctor Skaggs does not mean to imply that nitrous oxide is the anesthetic of choice for all operations, but he does believe that with this agent the patient can thus, for a short period of time, be anesthetized with less danger.

Ether, declares Doctor Skaggs, is contraindicated as an anesthetic for tuberculosis patients; indeed, patients suffering from organic diseases of the lungs and kidneys, as well as from severe suppurative conditions, asthma, empyema or diabetes, frequently do not respond well to ether or chloroform. Nitrous oxide and oxygen, on the contrary, can be used in conditions like those named, with comparative safety.

TREATMENT OF BOILS AMONG THE SOLDIERS

That distinguished dermatologist, Unna, has been contributing, under the title of "War Aphorisms of a Dermatologist," a series of short articles to the *Berliner Klinische Wochenschrift*. Some of the suggestions are of interest to American physicians engaged in civil practice: for instance, the following on the treatment of furunculosis.

Since baths and soap and most of the approved methods of treatment of boils are out of the question in the field, Unna recommends, emphatically, cauterization of all individual furuncles. When this is not practicable, he suggests the application of a paste consisting of ichthyol, kaolin, and glycerin (in the proportion of 10, 20, and 5) and covering with an impermeable dressing. When this plasma is not at hand or there is much irritation, a paste containing sulphur, zinc [oxide or carbonate?—Ed.], calcium carbonate, and glycerin may be substituted. Soft mercurial plaster also gives good results.

Speaking of the individual boil, Unna advises opening with a perpendicular stab into

the center of the furuncle, remembering that the lesion has been caused by the penetration of cocci into the hair-follicle. For this purpose, he recommends his "micro-brenner" (evidently a very small electric-needle cautery) as the best instrument to use; next, the finest point of the Paquelin cautery or a sharply pointed steel needle that has been passed through the flame of a spirit-lamp. Treated in this manner, the pain and tension cease at once, and the part should become painless to pressure.

The advantage of this method of treatment over the old-fashioned crucial incision is, that the foci of the cocci are disinfected *in situ*, these alone being destroyed, and not also the contiguous skin.

NASCENT-IODINE TREATMENT OF X-RAY-ULCERS

Doctor Bogrow, of the Dermatologic Clinic at Moscow (*Arch. f. Derm.; cf. Ther. Monatsh.*, 1914, p. 667), has adapted, in a case of a severe x-ray-ulcer, Pfannstiel's treatment for lesions of the mucosa, the result of x-radiation. The principle is, to load up the system with an alkali iodide and then applying hydrogen-dioxide solution to the lesion; whereupon the iodide in the secretion is decomposed, with the liberation of iodine, which then acts upon the tissues in its nascent state.

Bogrow gave his patient 6 Grams of sodium iodide per day (6 tablespoonfuls of a 5-percent solution), and covered the ulcer with a compress of gauze which was constantly kept wet with a 3-percent solution of hydrogen dioxide containing 1 percent of acetic acid. The sore healed nicely.

THE TREATMENT OF CHRONIC INTESTINAL STASIS

In view of the recognition of the importance of intestinal stasis in the production of disease and disease-symptoms, it is desirable to keep in mind the most striking and important of its clinical symptoms in a typical case; and these we find epitomized by William Seaman Bainbridge, in a paper appearing in *The Lancet* (Oct. 2, 1915, p. 739), in the following manner:

1. Pain or discomfort, usually referred to the region of the duodenum and stomach, but also to portions of the large intestine.

2. Gastric discomfort, nausea, and occasional vomiting, these resulting from obstruction to the outlet of the stomach in conse-

quence of ulcer or cicatrization of the pylorus or duodenum, or constricting bands about the duodenum, in the neighborhood of the pylorus. These symptoms may be classed under the ordinary category of "indigestion."

3. Various symptoms which may be cataloged under the term "autointoxication", which Lane has described as "flooding the liver with a quantity of toxic material picked up from the stomach, duodenum, and small intestine, in excess of what the liver, kidneys, and skin are able to deal with." These vary according to the susceptibility of the individual.

Under this head of intestinal stasis may be grouped a most important set of individual symptoms and physical signs; among them the following: Blotchy appearance of the skin, which is cold and clammy, especially over the extremities; cold perspiration, which exhales an offensive odor; loss of fat; lumpy condition of the female breast; thyroidism, sometimes; tenderness over the ileum; mental torpor—in fact, the entire symptomatology generally described under the head of autointoxication. Headache, melancholia, inability to sleep, and sleep disturbed by unpleasant dreams also come under this general classification of the symptoms of the condition in question.

4. Constipation, in the majority of cases; although this symptom sometimes is replaced by attacks of diarrhea. In one instance reported by Doctor Bainbridge, looseness of the bowels was persistent and distressing and could not be controlled by any of the customary means.

Doctor Bainbridge is of opinion that patients who present a sufficient number of the signs and symptoms enumerated may tentatively be considered as suffering from chronic intestinal stasis. However, a Wassermann test should be made wherever there is a possibility of syphilis being present.

Doctor Bainbridge, being a surgeon, naturally advises resort to the knife whenever the diagnosis is unquestioned. On the other hand, our own advice would be, to exhaust every possibility of medical treatment before sending any patient suffering from these symptoms to the operating-room. There obtains in the profession a growing belief, well expressed by Paul G. Woolley in a paper contributed to *The Journal of Laboratory and Clinical Medicine* for October, 1915 (p. 45), that "the surgical operation for intestinal stasis is not justified except as a last resort." Woolley further adds: "There is no definite information in the literature to

show that surgical procedures, made for intestinal stasis, have been more successful than medical ones." Anthony Bassler strikes the same note in *The New York Medical Journal*. See editorial, this issue.

Many times relief can be secured through the use of mineral oil and a properly regulated low-protein diet. Many of these patients do well upon Bulgarian-bacillus preparations.

THE TREATMENT OF TETANUS

Tetanus is one of the serious medical problems of this war in Europe. This disease and gas-gangrene are the most dreaded of the wound complications; but the military surgeons are having such a large practical experience with these two terrible diseases that they should eventually be able to throw considerable light upon their adequate treatment. Thus, we find in the October 23 (1915) number of *The Lancet* a paper upon the subject of tetanus contributed by Sir David Bruce, surgeon-general in the British army medical service. Most of the cases he saw occurred during September, October, and November of 1914. There were a considerable number of cases in the months of April and May, but only very few in June and July, 1915.

The average length of time between receiving the wound and the setting in of tetanus-symptoms was ten days. The cases having a short period of incubation were more fatal than those of a longer incubation-time. Thus, in those patients showing a period of from eleven to twenty-five days before the appearance of symptoms, the mortality was only 39 percent, as compared with 66.6 percent in those in whom symptoms appeared within ten days. Among 231 cases reported, the mortality was 57.7 percent.

Antitetanic serum has not proven markedly effective; still, Bruce believes it the best remedy we have; while, according to him, there is no evidence that any benefit has accrued from carbolic-acid or magnesium-sulphate injections.

He sums up the treatment of tetanus as follows:

1. Place the patient in a quiet, darkened room, under the care of a sympathetic and capable nurse.

2. The wound should receive the best possible surgical treatment, so as to insure the prompt and complete removal of all septic products.

3. The intrathecal injection (that is, injection into the nerve-sheath) of at least 3000 units of antitetanic serum should be the treatment of choice. At the same time 10,000 to 20,000 units should be injected intravenously and subcutaneously. This procedure is to be repeated as many times as the course of the disease seems to demand.

4. Patients should also receive sedative drugs, notably chloral or chloretone, these to be given in full doses.

SOME INTERESTING EXPERIENCES WITH AMEBIC DYSENTERY

How large a percentage of the cases of amebic dysentery treated with emetine are permanently cured? What are the causes of relapses, and how may they be prevented? These are some of the questions raised by Nathan Barlow, in *The New York Medical Journal* (Oct. 23, 1915), who has treated more than 300 cases of this form of dysentery with emetine in Honduras, and observed it clinically in the Charity Hospital at New Orleans. Of the large number of cases attended, however, only 58 are found suitable for tabulation. From these, Barlow draws the following conclusions:

The percentage of complete cures is much greater in mild or moderate cases than in the severe ones. In the latter, there is severe ulceration of the intestine, which affords harboring-places for the parasites, while insufficient circulation prevents their being reached by the emetine. However, while there is a very high percentage of relapses in these severe cases, after a second course of treatment with the emetine, the percentage of cures becomes high, as a result of the improvement in the condition of the mucous membrane of the bowel.

If the course of treatment with emetine is a short one, the percentage of relapses is high. Therefore, Barlow insists that every patient should receive at least 1 grain of emetine daily for not less than ten days. If so treated, 80 percent remain free from relapse for seven months or longer. The course of the emetine should not be continued longer than from two to four weeks. If used longer, both emetine and ipecac are liable to cause irritation of the bowel, thus aggravating and prolonging the dysentery. Doctor Barlow prefers to inject the 1-grain daily dose at one time.

Cases of hepatitis and liver abscess usually remain free from either intestinal or hepatic relapse, partly on account of the more frequent treatment they receive.

The bowels should not be flushed too frequently. It seems wise, however, to clean out the canal at the beginning of treatment and every five to seven days thereafter, in order to remove any cysts that may be present. If there is marked diarrhea, opiates should be given in sufficient quantity to control it.

SERUM AND BLOOD TREATMENT OF HEMORRHAGIC DISEASE

Dr. Beth Vincent calls attention to the fact that, when treated by the older methods, hemorrhagic disease of the newborn is characterized by a very high mortality, and also that, according to various authors, less than fifty percent of the patients recover.

By the use of gelatin—which is employed widely in Europe and is highly recommended by some German writers—this mortality was reduced, in some very favorable series of cases, to as low as 8.8 percent, and one author reported five cases, with none resulting in death. Others deny the efficiency of gelatin.

Since injections of animal serum and of human-blood serum have been suggested, the mortality of this serious disease has been reduced materially, and it has been claimed that the injection of whole human blood was even superior to the use of the serum.

In an interesting paper, with case-reports, in *Archives of Pediatrics* for December, 1912, the author reports on her experience with transfusion of blood from human donors, according to which eight out of eleven patients so treated were cured, all eight being, at the time of writing, in perfect health and showing no abnormal tendency to bleed. Four other patients that were not treated by transfusion received, instead, injections of whole human blood. All of them died; but the author denies that the fatal result can fairly be taken as evidence that the method is ineffectual. The author considers transfusion the best means of treating melena neonatorum.

ROCKY MOUNTAIN TICK-FEVER

There are two sovereign remedies for Rocky Mountain tick-fever, according to W. L. Frazier (*Med. Rev. of Rev.*, Oct., 1915, p. 610), namely, (1) quinine bisulphate, to be given in 5-grain doses every three or four hours during the day, and (2) ipecac—or, its alkaloid, emetine. The quinine, he alleges, cuts short the course of the fever, while the ipecac controls its most serious and dangerous symptom, the hemorrhagic purpura.

Miscellaneous Articles

Nonsymptomatic Sore Throat, and Rheumatoid Pains

REGARDING the suggested symposium on sore throat, may I add the following observation that has been serving me in many practical ways? I have noticed that many obscure fevers and many vague neuralgic and myalgic pains have turned out to be caused by, or associated with, nonsymptomatic pharyngitis or tonsillitis and that these would disappear after swabbing with a 10-percent solution of silver nitrate, followed by gargling with Dobell's solution. My attention was first called to this treatment by Prof. Gordon Wilson, of the University of Maryland, and forcibly so, since I was the subject referred to in "case 111" in his series published in *The New York Medical Journal* for September 3, 1910, under the heading of "Diagnosis of Tuberculosis." This is what Wilson wrote:

"The first was in the case of a former interne of the University of Maryland Hospital, who gave the following history: Family history good and the past history negative, save for the diseases of childhood. For two or three years the patient had had mild neuralgic or myalgic pains in different parts of the body, but unaccompanied by sore throat, nor were the joints affected at any time. He had also had, during his year's residence in the hospital, mild indigestion, with attacks which simulated chronic appendicitis. He had had no cough or pulmonary symptoms, had lost a little weight (which could be ascribed to his hard work), and, in fact, was in fairly good health.

"He decided, however, to have his appendix removed before leaving the hospital, and was operated upon under ether as a general anesthetic; and there was found an adherent appendix, but no acute inflammation. The appendix was removed, and the wound closed, and the patient did well for two or three days following the operation, when it was noticed that he was having an afternoon temperature of from 100° to 101° F., a rapid pulse (110 to 120), a tendency to clear his throat, but no

cough or sputum; and it was feared that there might be a lighting up of a tuberculosis lesion, as is so frequently the case following a major operation under a general anesthetic. The examination of the abdomen showed nothing to account for the rise of temperature, and the blood examination showed a leukocyte count of about 8000—which might well be considered normal. Careful examination of the lungs showed nothing abnormal.

"Then a complete routine examination was made, and there was found a bilateral enlargement of the tonsils, with some congestion, the examination otherwise being negative. The tonsils were then swabbed with a 10-percent solution of silver nitrate twice a day, and Dobell's solution was used at 3-hour intervals.

"Immediately following the swabbing of the tonsils, the temperature and pulse returned to normal, and remained so during the further period of his convalescence from the operation; which, I think, can be said to be therapeutic proof of the diagnosis of nonsymptomatic amygdalitis accounting for his symptoms and fever. This case would have remained undiagnosed, or at least incorrectly diagnosed, if a thorough routine examination had not been made."

The following bit of personal experience may be of some interest in this connection: At present, whenever I experience a neuralgic or myalgic pain (which usually is in the right knee, although at the time of writing it has appeared in my left shoulder), I request my partner—that is, my father, Dr. E. W. R.—to inspect my throat; and invariably there is found a condition of congestion. There are no striking symptoms, while the congestion disappears if I have the throat swabbed with the silver solution; if, however, I delay, there develops, in about two days, a mild pharyngitis, with the usual subjective symptoms. I have learned by experience that, as a rule, an incipient pharyngitis first manifests itself in my knee, in the form of rheumatoid pains.

Here is another case typical of the foregoing conditions:

In the summer of 1910, a man called upon me, complaining of pains in his back, which had occurred at different intervals within the last several years. There did not seem to be any indication of kidney involvement, although a much desired uranalysis was not made. The pain seemed to be worse when he was in bed or the bathtub, especially if the water was cool. There was no tenderness upon pressure over the spine; the pain was worse upon bending over, was not constant, nor, apparently, affected by damp weather. The man had had occasional attacks of sore throat, and, being questioned, he thought that possibly the pains generally were worse at those times. At this time, no subjective throat symptoms were present.

Examination revealed a chronic inflammation of the throat and the tonsils rather shrunken, of a reddish, or beetlike color, and shiny. The pharynx showed engorged blood-vessels, the uvula partaking of the same beetlike color as the tonsils.

Treatment consisted in swabbing the pharynx and tonsils with a 10-percent silver-nitrate solution and gargling every four hours with Dobell's solution. This treatment was followed by immediate improvement, the pains in the back disappearing in a very short time, and, when last heard from, there had been no return. Of course, there is a possibility of a recurrence, but this does not alter the point in mind. The diagnosis in this case is, chronic atrophic tonsillitis and chronic pharyngitis, while the subjective symptoms would lead one to think of lumbar myalgia.

These two cases are typical of many which it would be useless to relate, but all bear out Doctor Wilson's assertion that a routine examination is essential for correctly diagnosing these conditions; as, in fact, all conditions.

I cannot refrain from mentioning here that for the past two years I have been using calcidin in all acute conditions of the throat and respiratory tract. Whenever I have the slightest reason to suspect diphtheria, I aim to give antitoxin early and to settle the diagnosis afterward; but, whenever the throat trouble does not impress me as diphtheritic, I have found that calcidin seems to remove the condition remarkably fast, as, for instance, tonsillitis. In cases of the kind indicated, I supplement the calcidin with the silver swabbing, while in cases bordering on "quinsy" I give calcium sulphide to saturation.

All of these conditions being usually associated with intestinal intoxication, I add the sulphocarbolates after purging the patient.

JOHN W. ROBERTSON.

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WHY NOT THE SYRINGE—ANOTHER COMMENT

I have read with interest in December CLINICAL MEDICINE what Doctor Cannon, of Kidder, Missouri, says of subdermal injections, as also the editor's note. Especially was I interested in the statement that "the man who resorts to the syringe in chronic diseases can have, or should have, a perfect stream of patients coming constantly to his office." Yes, he *should* have, for this is the correct treatment. But, will he? I doubt it. Let's look at it from different aspects and consider locations, city and rural.

First: Since the general publicity given the Harrison antinarcotic law, the public associates the hypodermic syringe with "dope" and, erroneous as it is, it will be at least a full generation before people can be disabused of this deep impression, especially in country practice.

Second: In all quack advertisements, the public is warned against allowing the hypodermic syringe to be used; and it will read them, for, it loves the so-called "specialist." The latter is so very much better informed than the family physician; then, not only does he condemn the use of the hypodermic syringe, but, by the shrewd employment of such phrases as, "We never use the hypo," "a purely vegetable compound," "no minerals given," and such like, he molds public opinion, notwithstanding the fact that the very use of such expressions brand him (to the well-informed) as a quack of the deepest dye, as one who is pandering to the prejudices of the ignorant and one wishing to impress the public with the fact that all who give minerals and make use of the syringe should be avoided.

Third: The country physician's time is too much taken up "getting around" to stay in his office to attend to this constant stream.

Fourth: The city physician who would be bold enough to attempt to start this constant influx of patients by adopting the hypodermic treatment would, I fear, soon be set down as a crank and his patrons considered as dope-fiends; while the worst feature of it would be that his brother physicians would not endeavor to correct, but rather encourage that impression for temporary personal gain,

especially should the innovator be an old physician having a large practice and experience. Nevertheless, the suggestion by the editor is a good one, the method is correct, and possibly, whenever indicated, it could be adopted to great advantage in the city, by the man just out of college; but never, without great risk of losing his patronage, by an old, established practitioner.

I sincerely question the profitable application of hypodermic medication in country practice, for the reasons stated, as well as because of the fact that the people in rural communities are loth to accept new ideas of any kind, especially any deviation from the old routine of treatment where their lives are at stake.

So much for subdermal injections, and this brings to mind another thing.

Most medical-practice laws are promoted by city physicians, I believe. When are we going to learn that, no matter how practical and beneficial certain laws may seem to us, nine-tenths of them are impractical and even detrimental to the physician practicing in the country. I have practiced many years both in country and city, and I am convinced that few of the customs of either are applicable to the other.

It almost seems as though the principal object of most of the medical laws is, to retire the old physician. Whether this is because there are too many doctors for the amount of sickness, I cannot say; possibly it is because they are too critical and cannot refrain from passing judgment when they see young cigarette-fiends carry their forceps to every confinement-case and use it unnecessarily, tearing uterus and perineum, in order that they may become adepts in sewing them up, or, worse, that they may exact a larger fee. Little wonder that the old physician gets disgusted with modern obstetrics, especially in the country.

I am not condemning the use of the forceps—certainly not. The forceps is a splendid instrument when needed; but, I have seen it abused altogether too often not to take up my pen in defense of the young father who has had his marital prospects ruined simply that some young medico may become adept in the use of the tool.

That suggests several questions: How is a man to become an adept in the use of the forceps? How is he to become an expert obstetrician if he is not allowed to use the forceps except when needed, especially in the city, where many young men do not have four confinement-cases in a year, while

at least 90 out of every 100 deliveries should be made without resort to it?

What proportion of recent graduates who are permitted to go out and practice upon the unsuspecting inhabitants are qualified to use the forceps with safety to the mother and child? Answer: Possibly not one in a hundred; certainly not one in twenty-five.

Young man, if you are going to be a general practitioner and desire to retain your families, study obstetrics, and study it well, so that you may know how to act in an emergency. Make the acquaintance and cultivate the friendship of the old physician. You will never find a better friend; and he will be a friend in need. In a few years, you will be able to help him oftener than he has helped you, and you can rest assured that he will appreciate you and call upon you often and send people to you when he is too tired to go. And in that way you will become an expert obstetrician before you suspect it. You learn the art by experience, if you have the counsel of one who has gone through the work.

Remember, that it is natural for women to give birth to children without instruments being used—and simply because the woman wants you to employ the forceps is no reason why you should do so. And, if you expect to get experience by practicing upon your friends in private practice, you will soon have neither friends nor practice.

Let us hope that the much that has been written on "twilight sleep" (I do not like the term!) will do much to obviate resort to instrumentation. Suggestive therapeutics can be used to great advantage in these cases. I once unintentionally hypnotized a primipara and delivered her of a fine baby, without her feeling a particle of pain, notwithstanding she obeyed every word, even to getting out of bed and having a labor-pain standing at the foot of the bed and with her eyes open, in order to change the position of the child's head. It is astonishing what can be accomplished by suggestive therapeutics.

W. H. HOPKINS.

Norwood, Ohio.

[I like good critical papers like this one. They help to clarify the mental atmosphere. Of course I don't agree with everything Doctor Hopkins says, particularly with his remarks about hypodermic medication. It is hardly necessary to say that I am not advocating giving every office patient a "shot" every time he comes to see the doctor. That would be foolish, and would do harm. I am urging,

however, every physician to build up an office practice, and as early in life as possible. It may be impossible to "teach the old dogs new tricks"—but don't be an old dog. The time will surely come when the hard country drives must be given up, and then it's a comfortable thing to have people coming to see *you* for the treatment of the "walking" ailments and the chronic diseases. Even in the country the average doctor can adjust himself, somewhat, to this vision.

Hypodermic medication may be a means—and a very useful means—to that end, to be used in association with hydrotherapy, electricity, refraction-work, and the very best of internal medication to cure people who otherwise would desert you for the specialist in the great city. We know now that splendid results can be obtained with bacterins (which are given subcutaneously), with emetine, sodium cacodylate, with the iron tonics, and a score of other remedies so used. It will be very easy for you to dissipate any lingering fear of "dope" from the minds of your patients, if you treat them tactfully.

But enough of this. With Doctor Hopkins' views regarding legislation I am largely in accord. It is being overdone, and by men who have a very feeble conception of the responsibilities and difficulties of the country practitioner. It has been the constant effort of CLINICAL MEDICINE to rouse the profession to the importance of this matter.—Ed.]

APOMORPHINE FOR STRYCHNINE POISONING IN A YOUNG CHILD

The victim in this case was a little girl 3 1-2 years old, who was burdened with a hereditary luetic taint. Her father was Italian, the mother was American. The child found on the floor some red sugar-coated tablets containing 1-30 grain of strychnine, and ate them, then told her mother about these "candies." The mother was not alarmed, but did give the child some castor-oil. One hour afterward (at 6 p. m.), while at the supper-table, the child was seized with convulsions. The father hurried to my office with the child, who, upon her arrival, was in a semiconscious state and in an opisthotonic convulsion; and was emitting a low guttural cry.

I immediately gave the child a hypodermic injection of 1-10 grain of apomorphine (having been advised by telephone), not waiting to sterilize the needle and solution; then gave inhalations of chloroform. The convulsion ceased, but she had another in five

minutes. This also yielded to the chloroform. Another one occurred in about two minutes, when I started to make a rectal injection of salt solution. I now gave a second 1-10-grain dose of apomorphine, and soon the child had dropped into a sound sleep, from which she did not awake inside of one hour (at 8 p. m.), apparently all right.

The next day, an occasional twitch of the muscles was noticed, but otherwise nothing unusual took place.

No vomiting was produced by these excessive doses of the apomorphine, nor even a suggestion of nausea. Bear in mind that the dose was twice or three times the average amount for an adult.

WILSON D. WEBB.

Addison, N. Y.

THE EARLY TREATMENT OF DIPHTHERIA

Looking back over thirty-five years of private practice, I become aware of many changes in my own ideas as to what treatment to adopt in many of the cases coming under my care. Most marked and most satisfactory is the method I now employ for sore throat in which a membranous deposit is present. My emergency-bag always contains one or two tubes of diphtheria-antitoxin, so that I am able to start at once, at my first visit, the proper treatment. Almost without exception I inject 3000 units, then take a swab from the throat for making a bacteriologic diagnostic culture. The families of my clientele know my convictions as to the need of prompt treatment and, consequently, call me early. Locally, I employ a mild alkaline or saline spray, or a gargle if the patient is old enough; but I never apply any strong antiseptic or astringent. No matter whether the attack proves to be true diphtheria or septic sore throat, I feel quite safe with the one dose of 3000 units of the antitoxin.

In laryngeal or severe nasal invasions of the disease, I administer another dose of 3000 units very soon; that is, either at once or within twenty-four hours.

Rest in bed, liquids for food, early use of antitoxin, and cleansing of the throat with a mild lotion—not forgetting proper and "enough" elimination by means of calomel and a saline laxative—these constitute my main battery.

Most of the patients thus handled you may claim to have been "cured," rather than that

they "got well" despite the disease and—one might say—an expectant doctor.

THOMAS B. VAN ALSTYNE.

Binghamton, N. Y.

PROTECTIVE VACCINATION AGAINST SMALLPOX

In the December number of *CLINICAL MEDICINE* (page 1140), an article on the protection afforded by vaccination refers to the prevailing opinion that there is a *time-limit* to its efficacy. But, also, may there not be a question as to the *extent* of protection conferred in a given case? Why do some vaccinated persons have varioloid, while others equally exposed are not attacked?

The article referred to goes on to say: "The inspectors of the New York Department of Health occasionally meet with persons who can be successfully revaccinated at the end of six months, although the shortest period of immunity conferred by vaccination, in the actual experience of the department, is nine months." And the conclusion arrived at is, that "the immunity conferred by vaccination at times is very evanescent." However, the question arises, whether that really is true. Was the effect of the primary vaccination evanescent or was it simply insufficient?

It is well known that the susceptibility to disease varies in different persons. Then, there are also degrees of immunity or in the amount of protection afforded by vaccination?

Some years ago, a patient of mine contracted smallpox. He was duly quarantined and a nurse was employed who had previously had the disease, as evidenced by a face abundantly pockmarked. Before the first patient was out, the nurse was taken sick, and he had the disease in typical form (although not severe) and was decorated with additional pockmarks. So, then, this man's susceptibility certainly was not exhausted by his first attack.

Following that episode, I made it a practice, for several years, to revaccinate all who were willing, within a year—most of them at the beginning of a school-term. A few "took" the second time, and one I vaccinated the third time without result.

Are we, then, warranted in telling anyone that he is "fully protected" after a single successful vaccination? In connection with the infectious diseases, we sometimes speak of a certain person as being immune, which necessarily carries with it the thought of entire absence of susceptibility to the disease

or poison in question. If once actually immune, what proof have we that it is ever lost?

G. V. R. MERRILL.

Elmira, N. Y.

[The article referred to by Doctor Merrill, is an abstract of a report of investigations by the New York City Health Department. —Ed.]

STATE BOARD EXAMINATION QUESTIONS

In the January number, page 84, we printed a number of the questions asked at the California state medical examination, June 17, 1915, promising to continue the examination-questions in this issue. We little realized the amount of space which would be required, and in view of this we shall have to "adjourn" these for another month, at least, since we promised to give in this number the answers to the questions already printed. We are using what we can, but we find that we shall have to postpone the answers to the questions on chemistry, bacteriology and pathology, and materia medica and therapeutics, until the March issue.

Please let us know if you find these questions and answers interesting. Whether we shall continue this feature or not will depend upon the opinion of our subscribers.

ANATOMY AND HISTOLOGY

1. The lumbar plexus is formed by the anterior rami of the first three, and a part of the fourth, lumbar nerves, with the addition of a small branch from the twelfth dorsal. Branches go to the quadratus lumborum, psoas muscle, ilio-hypogastric, ilio-inguinal, genito-femoral, lateral cutaneous, obturator, and femoral.

The sacral plexus is formed by the lumbo-sacral cord, anterior rami of the upper third sacral and part of the fourth sacral nerves. The branches are the muscular, superior and inferior gluteal, small and great sciatic, internal pudic, perforating and cutaneous.

2. *Synarthrosis*.—An immovable joint, consisting of two bones, edge-to-edge. Example: The lambdoid suture.

Amphiarthrosis.—Two bones with an intervening cartilage, held together by ligaments, permitting of slight motion. Example: Vertebrae.

Diarthrosis.—A freely movable joint lined with synovial membrane and surrounded by ligaments. Example: Hip joint.

(b) The hip joint is a ball and socket joint, consisting of a head of the femur resting in the acetabulum and surrounded by capsular ligaments, the latter being reinforced by Y and other ligaments. The joint has flexion, extension, adduction, rotation and circumduction. The blood supply is from the obturator, sciatic, internal circumflex, and gluteal; nerve supply from the sacral plexus, the great sciatic and anterior crural.

3. The eighth nerve has two roots: the vestibular and the cochlear, the former terminating in the restiform body and the latter in the fourth ventricle. The first root emerges between the olivary and restiform bodies, the latter winds round the outer side of the restiform. The two roots then unite, pass through the internal meatus and again separate to form the vestibular and the cochlear nerves.

4. The thorax is formed by the twelve dorsal vertebrae, twelve pairs of ribs, sternum, and muscles and fascia attached to them. It is separated from the abdomen by the diaphragm and contains the chief organs of circulation and respiration, as distinguished from the abdomen which encloses the digestive apparatus.

5. The cervical pleura is the portion which rises into the roof of the neck. The costal pleura lines the chest wall, being attached to the costal surface of the thorax. The parietal pleura lines the different parts of the chest-wall, of which the diaphragmatic layer covers the upper surface of the diaphragm, except on its costal attachment. The mediasternal portion is a continuation of the costal pleura from the sternum to the vertebral column. The pulmonary portion is the layer which invests the lungs, dipping into the fissures between the lobes.

6. (a) Turn the head obliquely to the opposite side. Acting together pull the head downward and forward. (b) Flexes the thigh and rotates it slightly inward. (c) Moves the scapula and elevates the rib. (d) Moves the arm in all directions. (e) Draws the head to one side or backward and rotates the scapula. (f) Extends the lumbar spine. (g) Moves the arm inward and backward.

7. Diagram.

8. The jejunum contains no special structures. The ileum has collections of solitary follicles, usually showing a germinal centre, known as Peyer's patches. The duodenum has a large number of tubulo-alveolar glands known as the glands of Brunner. The glands of the ileum are broad and the cells are chiefly of the goblet variety. There are no special structures, but one sees longitudinal bands and sacculations.

9. The internal coat consists of three layers: Endothelial, subendothelial and internal elastic lamina. The latter does not take a stain well and appears as a light wavy band. The middle coat consists principally of non-striated muscle-tissue with small fibres and some elastic fibres mixed in; often there is an external elastic lamina, but not so permanent as the internal. The external coat is thick, fibro-elastic tissue, sometimes containing longitudinal muscle fibre. This coat contains the vasa vasorum and the nervi vasorum.

10. Commences by the union of the superior mesenteric and the splenic veins. The latter unites with the superior mesenteric to form the portal vein. However, the portal system has for its tributaries veins from almost the entire abdomen and pelvis, all the veins agreeing closely with the terminal branches of the corresponding arteries.

11. The superior cervical ganglion lies between the internal jugular vein and the internal carotid artery. It is the largest of the sympathetic ganglia. The inferior ganglion, which is joined to the superior by the commissural cord, lies behind the first part of the sub-clavian artery, between the last cervical process and the neck of the first rib. The middle cervical ganglion is usually located over the inferior thyroid artery as it passes behind the carotid sheath. It is frequently absent.

12. The mammary gland is an alveolar-tubular organ composed of from fifteen to twenty individual compound-glands, each of which opens by its own duct into the nipple. Each gland consists of lobes and lobules interspersed with fibrous and adipose tissue. Each lobule consists of tubular or alveolar acini, whose number depends upon the activity of the gland, and which are lined by the simple columnar cells wherein the fatty globules of the milk are accumulated. The ducts are lined by simple columnar cells on a basement membrane.

PHYSIOLOGY

1. (a) Hemolysis is the breaking down of the red blood corpuscle and the leaking out of the hemoglobin. It may be brought about either by destroying the envelope of the corpuscle, or by disturbing the osmotic balance between the inside and the outside of the envelope. Under the first heading we have as causes certain chemical substances in the blood, e. g., ammonia, snake venom, chloroform, etc., and almost all infectious toxins. Under the second heading the entrance into the blood of anything that dilutes the serum. Under both headings come the blood of other species of animals which are hemolytic to different species. In order for hemolysis to take place, there must be present in the blood a hypothetical element known as the complement, which forms the connecting link between the hemolysin and the hemolyzed corpuscle.

(b) Leukocytes are supposed to be manufactured in the red marrow of the bone, and they are eventually disintegrated and utilized for the nourishment of the plasma of the blood.

2. Peristalsis is increased either by direct stimulation of the sympathetic nerves supplying the musculature or (what is much more frequent) by negative stimulation due to impairment of cerebrospinal inhibition (diarrhea). Peristalsis is hindered by just the opposite nervous conditions (constipation).

3. Respiration is increased either by direct stimulation through the sympathetics or by irritation of the respiratory center in the medulla, as in fevers and toxemias, and by suspension of cerebral inhibitions, as in emotions; respiration is depressed by precisely the opposite conditions.

4. *Inhibition.*—The check action of the brain upon spinal and sympathetic innervation.

Diffusion.—The mixing of gases and of fluids in accordance with their atomic weight.

Osmosis.—The mixing of fluids through a semi-permeable membrane in accordance with their densities of saturation.

Diapedesis.—The transudation of the blood elements through the unruptured vessel walls.

Perimetry.—The measurement of the visual field.

5. The initial stages of growth are provided for by the small amount of nutriment contained in the ovum at the time of fertilization. Immediately on implantation the ovum absorbs nutriment directly from the uterine blood. Shortly afterward the chorionic villi burrow into the uterine membrane and the placenta gradually forms as a definite nutritional organ. The fetal and maternal blood do not come into actual contact, being separated by the walls of the fetal vessels. Nutritive material passes from the maternal to the fetal blood, and waste products pass in the other direction, by diffusion. Glycogen occurs in the placenta itself and in all the embryonic tissues during growth. No doubt the epithelial cells of the villi are the most active factors in the exchange of

materials. The kidneys may form urine long before birth, but the kidney functions of the embryo are doubtless performed chiefly by the placenta and the maternal kidneys up to the time of birth. The liver also begins its function early. In general, it may be said that for a long period the metabolism is principally performed by the maternal organism, but as term approaches the fetal tissue and organs begin to assume more independent activities.

6. Color blindness is generally assumed to be due to the absence in the retina of photo-chemical substances whose response to certain light waves is responsible for the color sensation in question. The details of this deficiency depend upon whether one accepts the Young-Helmholtz theory of color or the Hering theory. In either case, however, the absence of the substance or substances in question involves a blindness to the complementary colors. Thus, if a person be color blind for red, he is also more or less color blind for green, etc.

7. A reflex consists of a short circuit current through a sensory nerve, a spinal arc, and a motor nerve, to a muscle or group of muscles. If the spinal arc be in uninterrupted communication with the brain, the brain exerts a check influence upon the current and subdues the motor response. If this inhibition be removed by an interruption of the brain-cord path, the motor response is then maximal and the reflex is exaggerated.

8. The rods are supposed to be only sensitive to light and darkness and by their power of adaptation (regeneration of their visual purple) form the special mechanism for vision in dim lights. The cones are supposed to be responsible for the perception of color.

9. During the latter part of an inspiration the size of the brain is slightly increased, because of the rise of the systemic blood pressure. During the latter part of an expiration, its size is slightly diminished, for the opposite reason.

10. Sensations of hunger and thirst are due to different causes, according to the degree of the sensation. The earliest and most superficial sense of hunger probably has its origin in the peripheral nerve-endings in the stomach. The second degree of hunger is no doubt due to the general demand of the tissues for food and has its origin in various and complex nerve phenomena. There is still a further and profounder hunger which occurs under starvation, and is rather hard to explain.

Sensations of thirst are subject to about the same explanations, except that superficial thirst is due to the pharyngeal nerves rather than gastric.

11. Normally, the sources of uric acid in the body are the nucleins of the muscles whose breaking up produces uric acid as one of the end-products.

Uric acid is commonly formed in man from the dis-assimilation of more complex compounds, of which no doubt the acid phosphates are one of the principal types.

12. Section of a cutaneous nerve is followed by absence of sensation in the surface involved and presently by atrophy of the skin.

MANGIFERA IN DIPHTHERIA

In diphtheritic disease of the throat and nose, the specific tincture of mangifera is a

valuable addition to the usual treatment. In my little experience, when other treatment has failed to yield negative swabs, this remedy has done the work. The mangifera may be used as a spray or gargle, in the strength of 1 dram to 2 ounces of water.

H. K. SHUMAKER.

Flat Rock, Ohio.

[The editor will have to confess that mangifera is one of the many remedies with which he has had no experience. Perhaps other readers of CLINICAL MEDICINE can contribute "pointers" regarding its various uses. In diphtheria, antitoxin is the remedy to which we must tie our faith—but that doesn't mean that it is the only remedy of value.—Ed.]

A DOCTOR'S HOME, WITH PLAN AND PICTURES

The plan for the bungalow herein suggested is taken from the March, 1914, issue of *The Ladies' Home Journal*. The building stands on a double lot and faces to the north. The ground naturally slopes from the street



Front view of Doctor Knipe's home.

line back toward the alley; hence, I conceived the idea of utilizing a portion of the large basement for installing my automobile—as shown in the rear view of the bungalow; in pursuance of this idea, the natural slope was augmented by grading, thus enabling me to run the car into the basement garage almost on a level. This part of the plan I consider a most desirable feature, for it not only saved me the price of a new garage, but I also have the advantage of a warm room for the car in the winter time, because of its proximity to the furnace. And this means a great deal to me, as a physician, owing to the ease of starting a warm car, as compared with a cold machine.

Next, the two front porches are of equal size, and I have screened the one on the west for a sleeping-porch. As shown in the floor-plan, this porch opens into the front bed-chamber, thus making it very convenient to dress for bed in the chamber and then step right out on the porch. The convenience of this location of the chamber will be appre-



Back view of Doctor Knipe's home, showing basement garage.

ciated when considering the ease of retiring hastily when the weather suddenly becomes inclement during the night.

The large well-lighted living-room, with the open fireplace, is one of the pleasing features that should not be overlooked in this plan.

The basement is of the same size as the house 40 X 44, and is amply large for garage, furnace-room, coal-room, vegetable-cellar, and laundry.

The living-room and the dining-room are finished in oak, the others in natural fir.

The itemized cost of this bungalow, as built by me in the summer of 1914, is as follows:

Excavating, grading lawn, and draying.	\$ 112.85
Foundation and cistern (labor and material)	389.20
Carpenter (labor)	569.96
Hardware	125.39
Plumbing (labor and material)	251.10
Chimneys and fireplace (labor and material)	117.60
Plastering (labor)	90.00
Lumber and mill-work	1407.20
Electric wiring and fixtures	83.90
Painting and decorating (labor and material)	365.10
Heating-plant, including labor of installation	250.00
Sidewalks and incidentals	61.75

Total.....\$3824.05

J. B. KNIPE.

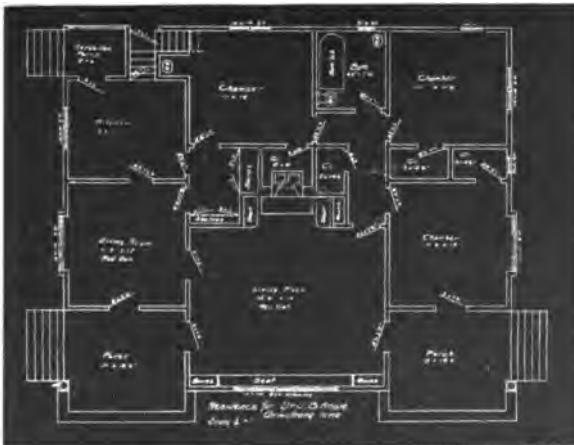
Armstrong, Ia.

THE PROGNOSIS IN PNEUMONIA-CASES

The death rate of pneumonia depends upon several factors. Thus, in general, the environment in all its phases has a large influence.

Similarly, the patient's age is an important factor; the old being likely to die, while the young recover. Race also has its influence; statistics show that the disease is much more fatal in negroes than in caucasians. Furthermore, previous occupations and conditions of health play a role. Thus, it is well known that those who work in mines, in foundries, or in places where the air is laden with dust, overheated, dry, and impure succumb more often than those who live in more normal surroundings. So, also, the condition of the patient's bodily health at the time the pneumonia is contracted may be a strong factor in preventing recovery.

The statistics of necropsies gathered from various hospitals show that there existed extensive interstitial changes in the kidneys, ranging from 5 to 8 percent, in those who had died from pneumonia. This is easily understood when we remember the class of patients that are taken to the hospital. They include persons debilitated from sickness, poor food, hard drinking, and venereal disease; and then that other class of patients—robust-looking laborers between the ages of 40 and 60 years, whose organs show signs of wear and tear and who have in or through excess of one kind or another weakened their reserve power.



Floor plan of Doctor Knipe's home.

Very few deaths occur from pneumonia among robust, healthy individuals. This fact is forcibly shown by statistics gathered from the armies of Germany, which are composed of picked healthy men. Here, the death rate from pneumonia is as low as 4 percent; as calculated from the deaths occurring in 40,000 cases of pneumonia in times of peace. However, one year after the present war began, the death rate had risen to 6.4 percent; thus showing the influence of exposure and hardships of warfare.

In pneumonia, there are several causes or combination of causes that lead to the death of the patient. Apart from mechanical interference with the respiration and also certain possible complications, the fatal event is generally due to a slow toxemia. As a rule, the pyrexia and the consolidation of the lung-tissue are of secondary importance in this disorder, when compared with the existing toxemia. The degree of this toxemia does not depend upon the bulk of lung involved; and there may be present severe and even fatally ending toxemia when only one-half of one lobe is consolidated, while in another patient the toxemia may not be nearly as profound and, yet, one whole side be involved.

I remember a case of acute mania, that was due to toxemia, in a young man who had the disease but very lightly. Probably, had the disease been more severe, he would have received closer attention and the profound toxemia would have been avoided. It has been my experience that many of these cases which develop profound toxemia present great variations from the usual typical picture. There may be but slight cough or none at all, no expectoration, but slight or no leukocytosis, and but slight rise in temperature.

This poisonous toxemia may develop early in the disease and from the onset cause a gradual reduction in the vital powers.

From the foregoing, it will be seen that in most instances the prognosis of pneumonia depends upon our ability to recognize and treat the toxemia. If the action of skin, kidneys, and bowels are looked after—in other words, if we maintain therapeutic cleanliness; the cause of the toxemia will be greatly reduced. We should also be alert to the use of remedies that will lessen the toxin-producing power of the pneumococci and to those that stimulate the production of antibodies. Those best suited for this work are nuclein, lobeline sulphate, and calx iodata, with pneumococcus-bacterin.

C. W. CANAN.

Orkney Springs, Va.

EMETINE HYDROCHLORIDE IN EPISTAXIS. WHEN THE WOMAN WAS "QUILLED"

Six years ago, while visiting another city, my wife was taken with epistaxis from the right nostril. She had three visits from a physician during that afternoon, and on his third visit he brought another physician with him and they used the galvanocautery. This was the first nosebleed she had ever had.

Last week, on January 6, 1916, she called me to her room at 5:30 a. m. Blood was running freely from the nostril (right side), also from her mouth. I did not try tamponing the nose, anterior and posterior, as that did not do any good in her first attack, since the blood, after two hours, pushed out the cotton and the bleeding was as severe as before. I thought at once of emetine hydrochloride, and had in my vest pocket a tube purchased recently. I injected one 1-2-grain tablet into the thigh at 6 a. m., then made a strenuous effort to get a specialist to come out; but it was early, and when I finally raised him at his office, about 9 a. m., he was busy and could not come for a few hours, and by this time the bleeding was nearly checked. At 12 o'clock I gave the same sized dose, and that was the last of the bleeding.

My wife was very weak from the loss of blood, otherwise complained of nothing unusual. Our son came in the evening, about 10 o'clock. I had 'phoned him early in the morning. He is in the drug business at the town of Waterville, the other side of the Cascades, 200 miles away. I write of my son's coming that you may know that it was serious, for we were concerned at her first attack, and wife says this attack was more severe than the first one.

My wife's weight is 212 pounds, and she is quite active. For several years she has had spells that cause her suffering—not pain but distress in the region of the heart. If she tries to hurry when walking, there is the sensation of great pressure in the left side, under the heart, with difficult breathing, and faintness comes on. Often after we hurry to catch a street-car it will appear and I give her two glonoin granules and two heart-tonic tablets (Abbott), and then she is relieved. During the attack of nosebleed, just described, she could not lie down because of the pressure of blood about the heart and in the head. She even felt better standing than in the sitting posture. I gave her about 90 grains of bromide of potassium in an hour, and her head felt better after that.

I shall always congratulate myself that I came to know the alkaloids. I would not like to do without them. It is not necessary to mention the different kinds, but I could give a good account of many of them.

Please excuse this long and rambling mis-sive, but I wanted you to know of the emetine episode, and could not refrain from mentioning the heart trouble. There is no organic (valvular) lesion that I can discover.

In the January *CLINICAL MEDICINE*, just to hand, I notice "Arkansas" speaks of some of the peculiar notions of the laity, and mentions the old lady's advice to blow in the hands to expel an afterbirth. I have heard women say that—and seen them do it. It brought to my mind the story told by a friend of mine, of a young doctor who was unable to remove the afterbirth. He had another young physician called in, and he also failed. Then they decided to call "the old doctor" of the town. When he arrived, and learned the condition of affairs, his first question was: "Have you quilled her, gentlemen; have you quilled her?"

"Quilled her," they said, "what is that?"

"I'll show you," replied the old doctor. He placed some snuff in a goosequill toothpick, put one end into the woman's nose and blew into the other. A tremendous sneeze—and the afterbirth was induced to change its location.

A. I. MITCHELL.

Seattle, Wash.

THE DEATH OF A NURSE FROM TYPHUS AFTER HEROIC SERVICE

The officials of The American Board of Commissioners for Foreign Missions have just learned of the death from typhus of Miss Marie Zenger, a Swiss nurse who was a member of the band of nurses and doctors despatched from the Board's station at Sivas, Turkey, to aid in caring for the sick and wounded in Erzroom early in the winter. Although not under appointment by the American Board, Miss Zenger was at the head of one of the orphanages established in Sivas after the terrible massacres some years ago and was closely associated with the Americans in all their work.

Early in the winter the American Hospital in Erzroom as well as the buildings of the American Board's Boys' and Girls' High Schools were filled to overflowing with sick and wounded Turkish soldiers. When typhus broke out, Dr. E. P. Case, the Board's phy-

sician, sent for help to the American hospital in Sivas. Dr. C. E. Clark, with a group of nurses, an orderly, and a druggist, took the twenty-one days' midwinter journey, across three mountains, to Erzroom, which, by the time his party arrived, was one big hospital.

Miss Zenger, the Swiss lady whose death has just been reported, did heroic service in connection with the American buildings, of which she took charge, seeing that they were cleaned and put into running order after the first typhus outbreak was somewhat in hand. She later supervised the organization of a hospital which some Armenians established in Erzroom. The Sivas party had started back over their mountain journey—Erzroom having received other reinforcements of military doctors and helpers—when Miss Zenger sickened. They reached Erzingan, an outstation of the Board, where a German hospital is located. Miss Zenger was taken there and given the best of care, but did not survive the crisis of the disease.

Miss Mary L. Graffam, head of the American Board's School for Girls in Sivas, was with Miss Zenger at her death, as she had been with her during her service in Erzroom. In a letter describing some of her experiences Miss Graffam says, "I cannot, of course, speak freely of all we see and hear. I feel that I am a different person from the one who left Sivas two months ago."

THE TREATMENT OF SORE THROATS

On page 1085 of the December issue of *CLINICAL MEDICINE* I find an invitation to contribute something on the treatment of sore throats. I have been in the practice of medicine just forty-nine years and nine months, and have treated a good many cases.

My usual method is to secure an active bowel action by the administration of calomel, podophyllin and bilein tablets. I also dispense as a gargle, to be used every two hours, a saturated solution of potassium chlorate, 4 ounces, to which I add 2 drams of tincture of iron chloride. If there is elevation of temperature, I give the patient a mixture containing tincture of aconite, 1 drop, and spirit of nitrous ether, 20 drops, to each teaspoonful of water. This dose is administered every three hours. I have never seen this treatment fail.

Should suppuration of the tonsil ensue, which is very infrequent, I order hot applications of antiphlogistine. If the sore throat is associated with a general cold, I prescribe a

1-grain tablet of calcidin every one or two hours. Without "frills," this is a *sure* way to cure a sore throat. However, you must get in your work early to secure results quickly.

W. S. CLINE.

Woodstock, Va.

QUICK RELIEF FOR METASTATIC ORCHITIS

A man of 64 years, very obese, had a severe attack of mumps, which resulted in orchitis. He received the usual treatment, including ichthyol and other topical applications, but with no apparent benefit. The temperature mounted to 103.5° F. I then sent him 10 granules each of pilocarpine nitrate, 1-64 grain, and the desfervescent granules, No. 1, with instructions to take one of each every hour till fever declined. I also sent calcium sulphide, 1 grain, and strychnine arsenate, 1-50 grain, one of each to be given every four hours.

Results were magical, and morning found the old gentleman free from fever and quite comfortable. Diaphoresis followed the third dose. Let him who thinks the alkaloids inert just try 'em a while.

J. J. CHAPMAN.

Nellie, Okla.

TAPEWORM IN A HORSE

Will you kindly inform me what to do for a mare with tapeworm. She has passed a number of segments, in fact, passes some with almost every bowel action. She has raised a colt this year and is now much out of condition. If possible, please give full directions, dose, and preliminary treatment.

C. E. JEFFREY.

Wickerville, Mich.

[We referred this problem to our friend and colleague, Dr. N. S. Mayo, whose comment follows:

"It is unusual to find horses, in the United States, infested with tapeworms, although there are three varieties that are reported as occurring in horses. All three are unarmed, and their life history is unknown.

"One of the best agents for the expulsion of tapeworm from the horse is areca. The dose is from 3 to 6 ounces of the pulverized nut. If the mare is in rather poor condition the smaller dose would be indicated. Before administering the remedy, diet the mare for

twenty-four hours, giving only thin bran mashes, no hay or other roughness, to empty the digestive tract. The pulverized areca nut can usually be given in a small amount of thin bran mash, preferably sweetened if she is dainty about eating. Give it in the morning, and follow in four or five hours with a brisk purgative of aloin, grs. 120; calomel, grs. 30; strychnine, gr. 1-4; or a ball of about 6 drams of aloes combined with 30 grains of calomel and ginger.

"This should bring the worms away. An important part of the treatment is a proper dose. This can only be determined by the size and condition of the mare. It is probable that she is also infested with roundworms. After giving the treatment indicated she should be well fed on laxative, nutritious but not bulky food. Avoid corn fodder, straw or coarse hay. Stock molasses is excellent added to her grain ration in sufficient quantities to secure a mildly laxative effect. She should also have salt to lick at will."—ED.]

THE ADVANCES IN THE TREATMENT OF CHOLERA

In view of the continent-wide war now in progress and the fact that Asiatic cholera already is a concomitant feature—with its threatening spread to transatlantic countries—it seems worth while to reproduce at some length the substance of an address recently delivered at Vienna by Professor Gustav Gaertner, and reported in number 23 of the *Militärarzt* (a supplement to the *Wiener Medizinische Wochenschrift*), as well as in *Das Oesterreichische Sanitätswesen*. Being in the nature of a survey, much of what is said naturally is general knowledge; some of the statements of facts, however, may not be so widely known. At any rate, a short review cannot be out of place at this time.

This invasion of the intestines—as of course is understood—by the cholera spirillum (cholera vibrio, Koch's comma bacillus) will give rise to disease-manifestations of varying intensity, and these, broadly, are grouped under these heads; namely: (1) Mild, or cholera-diarrhea. (2) A more pronounced type, cholera. These two forms are not serious and do not require treatment, provided the subject does not aggravate the attack by excessive and incautious eating and drinking—the larger number of transformation of mild cases into grave ones as well as of deaths following the dietary sinning on

Sundays proving this latter contention. At all events, when cholera is prevalent, it is advisable to put to bed everyone complaining of diarrhea, and to order strict dieting. (3) Cholera gravis constitutes the third, the truly serious, division.

Cholera gravis—actual Asiatic cholera—generally sets in with great vehemence, and in most cases the dreaded cholera collapse supervenes largely within the next few hours, but never later than the second day; about two-thirds of the victims not rationally treated succumbing in collapse on the first or second day.

The symptoms characterizing this collapse stage of the attack may be explained entirely by the colossal loss of aqueous fluid drawn from the blood and tissues; and innumerable experiments demonstrate that all the grave phenomena of the collapse arise, in the first place, from an inspissation of the blood, and not from circulating toxins. Just as soon as the thickened blood has been rendered more dilute again, by means of infusion of water the frightful picture is changed as if by magic, the patient, already in the very jaws of death, all of a sudden seems entirely recovered.

Still, the cause underlying the blood thickening has not been removed by the infusion, if the diluent was merely physiologic (0.06 to 0.08 p. c.) salt solution. Both diarrhea and vomiting continue, even may become aggravated, and soon the blood is so viscid again that the heart is unable to pump it through the capillaries of the vital organs; cholera collapse ensues anew. Indeed, a certain ingenious writer has termed this form of replenishing aqueous fluid "Danaid" infusions (in allusion to drawing water into a sieve-bottomed vessel).

As a matter of fact, experience in large numbers of cases has demonstrated that physiologic, isotonic salt solutions hardly influence mortality at all. Only a few clinicians continue to use them, and then only in the shape of continuous instillation extending over several days. But, demanding uninterrupted supervision, this measure may be applicable in isolated, selected instances; in general practice it is inadmissible.

The reason for the continuous water evacuations in cholera is, that the presence, in the gut, of the pathogenic vibrios, as also of their metabolic products, induces a mighty pouring-in of aqueous fluid into the entire gastrointestinal tract; and this, obviously, is withdrawn from the blood. In this manner, as demonstrated by Rogers, several liters of water may be taken from the blood inside of a few hours.

As long ago as in the year 1893, the author of the paper under consideration, Doctor Gaertner, in association with Beck, showed that this exosmotic current just described can be reversed by merely supersalting the blood; or, in other words, the exosmotic process is converted into an endosmotic one, so that the blood actually absorbs and holds fast water from the intestinal lumen—yes, even from other cavities and the tissues of the body. The introduction of hypertonic saline solution into the circulation hastens the absorption of fluid from the gut. At the time an actual inspissation of the diarrheic contents of the intestines was shown to take place after introducing excess sodium chloride into the blood current; consequently, that the osmotic process was reversed. At all events, the abnormal outpouring of water into the gut can be completely arrested.

In view of the facts thus indubitably demonstrated, Gaertner and Beck then (1893) felt justified in recommending the intravenous infusion of hypertonic saline solution as a therapeutic measure in Asiatic cholera.

In the same year, Doctor Rosner, of Budapest, tried this method in a number of patients, and with remarkable results; thereafter, however, it was forgotten until 1909, when Rogers, in Calcutta, took up the measure in earnest and tried it on a large scale. The results reported by this famous authority on tropical diseases are considered truly overwhelming by Gaertner, Rogers reporting a reduction of mortality among his patients to 23 percent, from 60 percent under his previous treatment; and, while formerly victims almost invariably succumbed in a fully developed collapse, they now rarely die in that phase.

Since then, this therapy has been introduced in various hospitals in India, as also in Palermo, with equal success. It likewise was practiced during the second Balkan war, in Servia; where, however, Doctor Mueller, in association with Loewy, substituted hypodermoclysis for the intravenous injection of the hypertonic salt solutions, owing to the technical difficulties presented under the circumstances. Regarding this introduction of the solution into the subcutaneous cellular tissue Regimental Surgeon Mueller reported officially:

"These subcutaneous [hypertonic] saline injections acted excellently. The seriously prostrated patients revived, the hardly perceptible pulse improved markedly, vomiting ceased. The intense thirst now could be stilled with copious drafts of warm drinks. When, as would happen in severe attacks, a

collapse-like condition again developed, a second salt-water injection (subcutaneous) checked it; these injections occasionally being repeated on the second or third day, perhaps, at renewed outbreaks, always followed by a remarkable cessation of the liquid evacuations."

While the death rate from cholera was about 42 percent, it reached only 16.4 percent for the total of 31 patients thus treated by Mueller; but, excluding 2 cases of men brought in a moribund state, the deaths among the 29 amounted to only 10 percent. Doctor Mueller concluded his official report with this declaration: "I cannot conceive of a modern cholera-therapy without infusions of hypertonic salt solution."

Doctor Gaertner corroborates the foregoing statement by Mueller, that, in case the choleraic stools reappear, the saline infusions are to be repeated on the second and, if need be, on the third day. The effect of these saline injections seems truly marvelous; for, we are told, even while the infusion (the first time) is proceeding, "the clinical picture of the disease changes as if by magic. The discoloration of the skin disappears; the husky voice becomes more natural; the cramps, the oppression, the vomiting, the diarrhea, all let up; the pulse grows stronger, the dejecta lose their rice-water appearance and change to a normal color, and their odor becomes feculent."

For theoretical reasons, the author advises resort to these infusions as early as possible, and rather unnecessarily often than to risk being too late, in the belief that the attack is a mild one and might be curable without this measure. The operation is a simple one and, properly executed, can do no harm. Early interference only can prove the patient's chance of escaping a serious turn, as also of his more prompt recovery. It is of highest importance not to wait till thickening of the blood has begun, and this an early introduction of the water will prevent.

Upon theoretical grounds, further, to secure increased elimination by the kidneys, various additions to the saline infusion (e. g. pituitrin, to open the kidneys) have been suggested, from among which Gaertner gives grape-sugar (the true—not glucose!) the preference; the amount recommended being 3 percent to a 1.6 to 2 percent sodium-chloride solution; but as high as 9 percent of grape-sugar has been injected, without deleterious effects.

Beside the hypertonic salt infusions, Rogers favors the internal administration of potas-

sium permanganate, 1-10 to 7-10 Gram to 1000 Cc. of water; and also keratinized pills containing 0.15 Gram of the same chemical, 1 of these pills to be given every quarter hour until 8 have been taken, and half-hourly after that. His idea is, to destroy, by means of this powerful oxidizer, the vibrio-toxins in the digestive tract.

More recently, Stumpf has proposed the use of the white bole, large quantities of it to be ingested, suspended in water; and to be repeated as often as the drink is vomited. The intention here is, to coat the intestinal mucosa and thus obviate absorption of the toxins present. Several patients are asserted to have been favorably influenced.

A. G. VOGELER.

Chicago, Ill.

DEPARTMENT OF EXTENSION

As announced in the September number of *CLINICAL MEDICINE*, the little articles appearing in this department are to be handed by the physician to his patient. This literature is not to be substituted for the personal word of the physician, but represents the minimum of instruction and information for each patient. Probably the majority of physicians make a practice of giving an impromptu talk on whooping-cough, for instance, that will include a greater amount of information than found in the article below. If so, a great deal of time will be consumed in imparting this knowledge to each mother whose child has pertussis.

On the other hand, it is probable that in the daily routine at least some mothers receive less than this "irreducible minimum" of information. To standardize the doctor's work, we offer this little article, so that each and every mother can have at least this modicum of learning for the protection of her own and her neighbors' children. Anyone is at liberty to reprint this article, or we will ourselves supply reprints at a nominal cost.

SIMPLE RULES FOR THE PREVENTION OF WHOOPING-COUGH

Whooping-cough is caused by a certain species of germ which lives and multiplies in the delicate lining of the windpipe and bronchial tubes. The germs not only increase the formation of mucus, or phlegm, but also render the air-passages less able to throw off or eject such material. The cough is merely the body's effort to get rid of the germs and the excess of mucus.

For some obscure reason, the public tends to regard whooping-cough with a certain levity, as though it were in some degree a joke. Even those who regard it seriously often fail to realize its

very grave danger. Infants having whooping-cough show a higher mortality than do adults with either pneumonia, smallpox, typhoid fever or yellow fever. A reliable authority states that out of every 100 nurslings sick with whooping-cough, 40 die. If the age-limit is raised to 2 years, out of the 100 only 25 die. Whooping-cough rarely causes the death of a child above 5 years of age. The death record of a certain European city showed that during forty years whooping-cough had killed more people than had any quarantinable disease.

Children suffering from whooping-cough can communicate it to others from the time it makes its appearance until recovery is complete. It seems likely that danger of contagion lasts for a certain while after the cough has entirely disappeared. In order to catch whooping-cough, a child, as a rule, must come into personal contact with a person suffering from the disease. It is probable that the secretions and discharges from the nose and mouth are the medium by which the germs are spread from one person to another. It is possible also that toys or clothing may be soiled with discharges and thus convey the contagion; but such instances are rare. The time intervening between exposure and the development of the disease usually is less than sixteen days.

In order to guard against whooping-cough, young children should be kept away from crowds and should not be exposed to personal contact with any except persons known to be healthy. During an epidemic, great care should be exercised toward babies.

A parent whose child contracts whooping-cough should either keep the child at home or allow it liberty under careful precautions. If a child does not touch or play with other children, it can go out on the street without endangering the others. Coughing toward other children, exchanging toys with them or coming in close contact with them should be forbidden.

A vaccine against whooping-cough has been used by some, but the physician in charge of the case should be left free to use it or not, as he deems best. It is particularly advisable to give the best of care to whooping-cough patients under 2 years of age. The general strength of these little patients must be carefully saved. The treatment should be along systematic lines carefully followed out, with a view to saving the patient's strength.

THE FITZGERALD METHOD IN PAINLESS LABOR

Any method, no matter how improbable-seeming it may be, if calculated to render labor less of an ordeal, is worthy of consideration by physicians. Therefore, there may be something well worth "trying out" in the new method of inducing analgesia discovered by Doctor Fitzgerald, of Hartford.

A number of physicians have reported results, which, if confirmed by further experience, warrant us in believing that zonotherapy promises to be a boon to womankind.

To those who have had experience with zonotherapy in dentistry and in the relief of

rheumatism, lumbago, neuralgia, and other painful affections, mitigation of the pains of childbirth seems quite within the bounds of possibility. In any event, it will not be difficult to put it to the test, and then we shall see what we shall see.

Dr. R. T. H. Nesbitt, of Waukegan, Illinois, sends this very remarkable case-report:

"Last night I was called to attend what I expected would be my last case of confinement, as I have been doing this work for so many years that I intended to retire. From my last night's experience, I feel as if I should like to start the practice of medicine all over again.

"The woman I delivered was a primipara and small in stature. Her child weighed 9 1-2 pounds.

"When severe contractions began and the mother was beginning to be very nervous and to complain of pain, at which time I generally administer chloroform, I began pressing upon the soles of the feet with the edge of a big file, as I could find nothing else. I pressed upon the dorsal surface with the thumbs of both hands on the tarsal-metatarsal joint. I exerted this pressure over each foot for about three minutes at a time. The woman told me that the pressure on the feet gave her no pain whatsoever.

"As she did not have any pain, I was afraid there was no advancement. To my great surprise, when I examined her about ten or fifteen minutes later, I found the child's head within two inches of the outlet. I then waited about fifteen minutes, when I found the head at the vulva. I then pressed again for about one or two minutes on each foot, the edge of the file being on the sole of the foot and my thumbs over the tarsal-metatarsal joints as before. In this way, I exerted pressure on the sole of the foot with the file and pressure on the dorsum of the foot with my thumbs, doing each foot separately. The last period of pressure lasted about one and a half minutes to each foot. Within five or ten minutes, the child's head was appearing, and I held it back, to preserve the perineum. It made steady progress, the head and shoulders coming out in a normal manner. Within three minutes, the child was born, crying lustily. The mother told me she did not experience any pain whatever, and she could not believe that the child was born. She laughed and said, 'This is not so bad.'

"Another point that is very remarkable is, that, after the child was born, the woman did not experience the fatigue that is gen-

erally felt, and the child was more active than usual. I account for this on the principle that pain inhibits progress of the birth and tires the child. But, as the pain was inhibited, the progress was more steady and thus fatigue to both mother and child was avoided."

Dr. Thomas Mournighan, of Providence, Rhode Island, supplements this experience with several others—equally ridiculous or revolutionary—depending upon our point of view.

"1. Multipara—mother of four. Shortest previous labor, eight hours. Had had a laceration of uterus at first delivery. Had also one forceps delivery. When labor set in, she was given two aluminum combs to hold, and instructed to make strong pressure upon them, with a view to inhibiting pain, particularly in the first, second, and third zones. These combs were four inches in length and slightly roughened on the ends, so that the lateral surfaces of the thumbs could more effectively be stimulated.

"I was called at 4 o'clock a. m., and arrived at 5:05, when the babe had just been born. The woman told me that she had been in bed for only ten minutes. There had been only one severe labor-pain. This was when the head was delivered. No exhaustion followed, as in her previous labors, and she said laughingly, 'I believe I'll be able to get up this afternoon, doctor.' The afterbirth delivery seemed to be stimulated, and the pains were controlled by stroking the backs of the thumbs, first, and second fingers with the teeth of the combs.

"2. Primipara, 37 years old. This woman had a badly retroflexed uterus, which seemed to retard the advancement of labor, for she required five hours for delivery. She also used the comb pressures and, in addition, was provided with a rough-edged shallow box, upon which she pressed firmly with the soles of her feet. Four hours after delivery she had sharp afterbirth-pains, which were controlled by the stroking method before described. This seemed to give complete and satisfactory relaxation.

"There were three other cases, all of which responded equally well to treatment by means of zonetherapy.

"It should be added that, while the pain was inhibited, there seemed to be no diminution in the strength of the uterine contractions."

This may all sound foolish in the extreme. Yet, there are many other things equally foolish in the practice of medicine. And, if zonetherapy will do what its advocates claim for it, it may well be taken gently by the

hand, lifted out of the foolish class and placed among the ultrasensible procedures—where it belongs.

EDWIN F. BOWERS.

New York, N. Y.

[Our readers may form their own opinions as to the value of the method. We confess to skepticism. However—try it.—Ed.]

FROM A FLORIDA LUMBER-CAMP

If you will excuse the "picked-up-dinner" appearance of this letter, I will try to tell you something about the problems of a Florida lumber-camp surgeon; and if the



The Board of Health—Doctor Brigham and Superintendent Sullivan.

letter is not all that it should be, please remember that I am located 59 miles back in the woods, where we have

Trees in front of us,
Trees to the rear of us;
Blasting all 'round of us
Volleyed and thundered.

In my present camp, which is known as Blue Creek Camp, we have 25 white families and 200 colored people, all of whom are under my professional care. We live in boxcars, of a kind shown in the pictures which I am enclosing. In the Company's old camp (abandoned last May), the cars and shanties stood close together, and filth, dirt, old cans, and other rubbish were knee-deep around them. Slops and kitchen-waste were all dumped under and about the cars, until conditions became so vile that about 40 people were taken sick each day. As for malaria—that was fearful!

I used to visit this camp twice a week, coming from Alton, Florida, where the Company's mill is located. Finally I was persuaded to take charge of the camp and go there to live, stipulating that I be given



A Birdseye view of the Blue Creek (Florida) lumber camp.

full power to clean up things. Inside of two weeks after arriving there the grounds about the cars were clean. All the accumulated filth was burned and the cans were buried. Then rules were formulated, and fines were provided for any infraction. These rules and regulations are still in force, and I can assess any person employed at the camp \$1.00 if at any time he allows waste to accumulate, or whenever I find a bit of paper, a tin can, a pasteboard box or anything like that around his habitation. After the third offense of this kind, I may order the offender to be given ten lashes. After one negro had received a whipping for carelessness of this kind, camp cleanliness was amazingly improved. If any of our workmen do not like my sanitation rules, he is at liberty to get out; however, everyone who stays must obey, or abide the consequences.

The result of this regimen is, that I have gained the reputation of having the cleanest

were made 30 feet wide along the fronts and backs of the cars and houses. Weeds and grass were cut, stumps and roots removed, and all ditches, ponds, and swamps alongside the tracks were kerosened. Also, the wood piles were located at definite points, and deep wells were drilled for pure water.

As a special feature, I must mention a hospital-car, provided at my suggestion. This car, I believe, is the most complete of its kind in existence, and, so far as I can ascertain, it is the only one owned by a lumber-camp. The furnishings are my personal property, and, as you can see by the illustration, I have in it a small drug store—in which, by the way, you can see, the alkaloids have a prominent part. Poisons and narcotics are kept in a small case—shown at the right of the picture. The window in the drug-room section is covered with a white gauze curtain. The car also contains an operating-room, and, moreover, is provided with running water.

When I get my automobile—which will probably be next month—I expect to be able to have electric lights in the operating-room, with current from the lighting-system of the machine. One end of the car, when finally completed, will have four beds. A 6x8 corridor lets in plenty of air and light. The car also is fitted with airbrakes. Finally, if anyone is injured beyond my skill to repair, we can hitch on one of our locomotives and rush him to a hospital at Jacksonville or Valdosta.



Doctor Brigham's hospital car.

lumber-camp in all Florida. Better, the sick among our workers have averaged 3 1-2 persons per week since May 15, as compared with 200 taken sick in one camp of 500 population 15 miles from here, and 100 sick out of 300 people at another one.

When we moved to our present camp, I had all the cars and shanties placed lengthwise at 30-foot intervals. The "streets"

In a few weeks, we are going to move this camp to another location, and I am now laying it out carefully and hope to be able to reduce the amount of sickness even below the present rate. I am sending herewith some photographs of the camp to give you an idea of what we have. I think it a "model"—not meaning by that what the young woman found in the dictionary after someone told

her she had a model husband; to wit: "Model—a small imitation of the real thing."

P. H. BRIGHAM.

Alton, Florida

[Doctor Brigham, like so many other resourceful men, is an extensive user of the active principles. Not only is he attracted



Operating-room in the hospital car.

to them because they are effective, but also because they are concentrated and easy to ship as well as to carry. This is a matter of much importance to a physician practicing his profession 50 or 60 miles distant from a railroad or express office! And that reminds me.

Do you know of the handicap under which such a man at present labors in *securing* his drug supplies? As matters now stand, it is illegal to send "poisons" by mail—and that word "poisons" has been ruled to include a large proportion of our most potent remedies. This law, or "regulation," should be revised. Doctors deserve fair play, and they should fight for it. Write to your congressman and to the postmaster-general and tell them how you feel about this.—Ed.]

THE TREATMENT OF NOSEBLEED

In those cases of nosebleed in which it is necessary to call in a physician, there exists in the minds of patient and family a great deal of apprehension, amounting sometimes almost to a panic, this manifesting itself as hysteria or convulsions in very nervous persons,* add to this the dread of anything like a surgical operation, and the coming of the physician is for patient and family a most nerve-trying ordeal. I have witnessed more than one bloody ordeal, where it was first necessary to hold the child by main brute force before the plugging of the nose (as it was called) could be completed. The appealing

tears of the frightened child hiding its face in the mother's bosom and clinging convulsively to her gown and the dictatorial words and actions of the doctor who has lost all patience are mental pictures not easily erased. Contrast this ancient relic of barbarism with my new method which has for many years been to me, and to the patient and friends, a very speedy and pleasant solution of this small but vexed question.

Prepare two pledgets of cotton just large enough nicely to fill the opening to the nose. In the middle of each tie a thread six inches long. Ask for a teaspoonful of vinegar or some vaseline. The latter you should carry with you, but, if you can direct the attention to so small a thing as looking for and bringing the articles to you, you will help to break up the extreme tension. All the time you are preparing these things before your patient, assuring her—if it be a girl—that you are not going to cut or to use any instruments whatever.

Now take out of your pocket a long lead-pencil. Place one end against the middle of one of the cotton pledgets and pull the cotton well down over the end of the pencil. Now apply vaseline quite plentifully over the outside of the cotton, then say to the patient: "See how soft and smooth this is it won't hurt; now I'm going to push this up your nose just as gently as can be." And at once



Drug-room and office in Doctor Brigham's car.

you introduce the pledget, carefully pushing up till you get even with the top of the palate. Now elevate the end of the pencil in your hand and push horizontally back and over the palate. The lessened resistance will tell you when the posterior naris is reached. Withdraw the pencil and begin to make traction on the end of the string which you have all the time held in your left hand. The resistance offered to your traction will show that the posterior naris is in opposition with

the pledget. The blood now all comes out of the anterior nostril in increased volume.

The cotton smeared with vaseline, in being passed to the posterior naris, anoints the whole nasal tract as well as furnishes an impervious backing to the posterior outrush of blood.

On the morrow, when this artificial obstruction is removed, the vaseline renders this an easy matter, for there is no rending of scabs and dried blood, for the coagulum and cotton are inserted with vaseline and the delicate mucous membrane is fully protected. The withdrawal of the whole mass is an easy work.

Vinegar is one of the best of styptics, and is always at hand.

Of course, there are bleeders, in whose case the bleeding will come from some other mucous surface. In that case, other means are necessary. For many years, in these special cases, I have used atropine, 1-50 grain, and usually let the patient chew the tablet between the front teeth and allow to absorb from the mouth. But when I was gravely assured by the oculists that there was a remote danger of increasing intraocular tension, and thereby aggravating or perhaps producing a glaucoma, I desisted and found in hyoscyamine (used in the same way) an entirely reliable substitute.

While atropine and hyoscyamine are isomeric and isomorphous, they are not the same; yet, in their action on the dilatation of the blood-vessels they show precisely the same results. But now that the king of hemostatics—emetine—which for half a century has been waiting in the wings of the theater, has unostentatiously stepped to the center of the stage into the full glow of the footlights, we have no further need of assistance in this line.

C. S. COPE.

Detroit, Mich.

MEDICAL SOCIETIES

The purpose of a medical society should be, to gather the medical fraternity together for mutual benefit, socially, professionally, and financially. Other organizations meet at stated periods for the same purpose. Miners, carpenters, merchants, barbers, bankers, all have their meetings and devise ways and means to better their conditions in life. They care not what view others take of their action, they act independently of outside criticism. If they agree to open their business places or

to close them at a specified time, they do that very thing, regardless of what others do or say. They are a unit in carrying out their decisions. If any of these organizations decide to raise the price of their product or to advance the price of their labor, they bring it up for discussion, vote on the proposition, back up their vote with their signature, then carry out their decision in the daily routine of their business.

But, how is it with this and most other medical societies? My observation is, that very little has been accomplished by our society. We meet and discuss subjects that, if carried out in our practice, would benefit, not only the physician himself, but his profession as well. Miners and carpenters meet, and say, "We must have so much an hour for so many hours' work." They all agree to it, and then carry it out.

Barbers meet and decide upon a certain price for their work. They carry out the change in price, regardless of what you or I may say. You go to a barber, a miner, a carpenter or a merchant and ask the price for certain work or for a certain product, and they will tell you immediately without hesitation. Go to another in the same line of business, and he invariably will tell you exactly what the other fellow said.

See? They are united. On the other hand, let a physician be called to a case, and he will get out his pencil and figure out the distance at so much a mile, and make it, say, \$5.00, then proceed to charge the patient \$3.00 or \$3.50. He thus brands himself as a coward and a deceiver. Confinement cases in our county are \$10.00 plus mileage. Yet, how few there are who carry this out. Some do, I know, but I know some who do not. Drugs lately have advanced many percent; still, who is charging 75 cents or \$1.00 for prescription instead of 50 cents? We keep on charging the same price to others and pay the increase ourselves, and for no other purpose than to run a skin-game on competitors and play busy, when it is very little money anyone of us, even the busiest, is making. Eight physicians out of ten who ever get ahead financially either have used trickery in getting their wealth, or else inherited or married it.

What has this or any other medical society done for you individually? Can you blame a physician for not belonging to the society when it accomplishes nothing for him? Show outside doctors that the society really does things, and every practitioner in the country will be glad to become a member and

attend every meeting. I consider it a waste of time to meet and accomplish nothing.

Here are a few suggestions as to how to improve our society as a whole and to benefit individual members:

1. Have a definite purpose to accomplish something at each meeting.
2. Put forth special efforts to have all physicians in the county present. (Give them something to do.)
3. Carry out in practice what is discussed at the meetings.
4. Report every meeting in your state medical journal. (Let our brother physicians know we are alive.)
5. What is said and done in a medical meeting should be held as secret and sacred as if said or done in a masonic lodge.
6. Let's do something, or quit.

This paper was recently read before a medical society by an Illinois physician.

"KIRK."

CALCIUM SULPHIDE IN GRIP

I have had excellent results with calcium sulphide in cases of grip, so widely prevalent at present; and in the details of one of these cases others probably will be interested. It is as follows:

The patient was a young man of 17 years, a clerk. When I saw him, at 7 o'clock in the evening, he had a temperature of 103.5° F.; respiration was 26; pulse, 120. He complained of headache, pain in the chest, and was coughing up large amounts of white frothy serum mingled with a little unclotted blood. There were bubbling rales such as I had never heard before, with a "whistling" sound in both lungs. Apparently a case of pneumonia.

I gave him granules of calcium sulphide, 1-6 grain each, one to be taken every twenty minutes, until complete saturation was secured; this to be followed by two compound cathartic pills. A cold compress was ordered placed over the chest until the fever fell. Belladonna every hour.

The next morning when I called, the right lung was cleared up; the headache was gone; pain in chest better; temperature, 99 degrees; respiration, 20. The left lung still emitted rales, but lessened. I gave belladonna and bryonia. On the fourth day, the lungs were cleared, temperature was normal, respiration also was normal; he had no headache, but a slight laryngeal cough had come on. Left some iodized lime, with orders

to let me know if the cough continued. I have not heard from him since.

How's that, brethren? But, wait, the boy told me of having had pneumonia five years before. This statement I doubt, although his parents insist it is true. I got pay for only four calls—however, I got a new family added to my list.

V. M. J.

Chicago, Ill.

[Doctor Candler tells me that calcium sulphide is acting beautifully in the cases of grip so common this year. He uses it in association with quinine and calx iodata. Another remedy giving most satisfactory results is a combined pneumococcus and streptococcus bacterin. Read Doctor Biehn's paper, this issue.—Ed.]

CONFESSIONS OF AN UNKNOWN PHYSICIAN

In the dizzy whirl of life's great battle, the surface of observable things attract the attention almost exclusively. The deeply laid plans and subtle intrigues of selfishness hide behind the suave manners that are cultivated in order to conceal them. We are all hypocrites—more or less.

The practice of the art of medicine affords opportunities, to those who wish to accept them, for unlimited deception, unrivaled immorality, and unbelievable treachery. These favorable conditions for viciousness tend to produce men who live double lives, lives in which the good shows resplendent to the casual observer, and thus the devilish part is obscured. The truth in its complete nakedness, the "altogether," if you please, seldom comes before us for our edification.

In the instance which prompts this little narrative, the frank admissions of the submerged part come from a physician who lived, apparently, as you and I live, who enjoyed the confidences of thousands, and who left the earthly stage of human acting credited with having added considerable to the sum total of general human happiness. He was called a good man and a successful physician. Peace be to his ashes! And this is his confession:

"The twilight of a fairly brilliant life now warns me, with its shadows, that eternal rest is not far away. I say 'brilliant' life, because the clouds of sorrow, sin, and self-condemnation have not shut out the sunshine of happiness to a very large extent from my day of life.

"Where I have infringed the restrictions of moral, social, and legislative law, in order to gain personal ends, I have freely offset these transgressions with kindly acts for the true happiness of others. The confines of my radius of personal action have been defined entirely by my whims and fancies. I have escaped apprehension simply through the use of clever conduct. Conscience, that guardian-angel, has not approached very near to me for many years, although she used to walk close by my side. Sympathy, Love, and Kindness have been companions whose friendship I have much enjoyed, although they never met Sincerity in my company. Virtue, Truth, Selfdenial, and Religion were all introduced to me by my mother when I was quite young, but they departed many years ago, and I have not seen their faces since. Today, by the mellow light of Time's lantern, I notice that, while Contentment is near my side, Regret is not far away, and Humbleness is ready to clasp my trembling hand. My memory is faltering, my step no longer sure, and the frost of life's Winter is on my brow.

"Early observations taught me that shrewd suaveness, apparent friendliness, and clever flattery were sure assets for a successful life. I learned the lesson well, and have cashed in abundantly.

"Now, as I hesitate to catch a breath and my old heart skips a beat or two, I wish to be frank and, speaking from a grinding experience of many years, tell you who read these words that my pathway is not the best one for you to follow. Scan it closely as I picture it in words, and let my warning serve to direct your steps to a better road.

"As I finished my medical course at college, I stepped forth, from the nicotine-scented amphitheater of knife-carved seats into the arena of contest, like a king. My dreams were beautiful with the glare of glory, the gilt of gold and the flowers of gratitude. Trouble with her bastard children were nowhere to be seen, and around me stood proud Pomposity, condescending Philanthropy, and unexplainable Egotism.

"But, I had factors of success in my possession. I shook hands fervently with people whom I did not like, extended favors freely to those who treated me with disdain, and graciously continued to do professional work for those who smashed me in the face with gross ingratitude. My wife was a true helpmate, and whenever I failed to carry out this very practical program in the least she would kindly remind me of my omissions.

"I soon found that Integrity, while charming from the viewpoint of theory, needed a veil to make her more generally acceptable; so, I skilfully obscured her lovely face as I carefully extracted the cork from my placebo-bottle, smoothed down the ruffled feathers of family wrongs with the delicate fingers of Falsehood, and gently covered the nakedness of Truth with at least the leaf of a fig-tree.

"I was not a trained nurse, yet, I soon learned to 'nurse' my patients, so that the dimensions of my monthly statements assumed more satisfying proportions.

"I found that, when but a simple remedy was actually needed, the ledger would look better if I added to the treatment a few inoffensive tablets, a little gentle rub-on, and a mild laxative. The quite generally needed eliminant kindly served as a slip-by for Conscience.

"I was naturally very sympathetic, and occasionally, when I observed a hopeless invalid stepping painfully close to the grave, with no possible chance of evading it, it seemed an act of mercy to give him a euthanasic push, with my hypodermic syringe, into peaceful rest.

"Surgical work always appealed to my ambition, and, as I weighed the chances of individual success or failure, the possibility of mistakes and the misty prospects of the end in view, I reassured my growing doubts with the thoughts that coffins are seldom opened, and even that cold cash is warmer than a corpse. Like other amateur surgeons in small-town hospitals, I floundered haphazard through major operations, sometimes meeting with surprising success, and I kept up my supply of cases by dividing the fee with the doctor who was too nerveless to do the job himself.

"Morally I was naturally a clean man, but the straight path of virtue did not seem quite so easy to follow when circumstances crowded human instincts to the limit. For example, did it not seem kind and considerate when some winsome female who yearned for maternity, but who was denied by the adverse condition of an old derelict, received the treatment that her case demanded?

"I have always been a strict prohibitionist, publicly, but I have consumed quite a large amount of peruna and other potables that do not put a stain upon the dry ballot, so far as anyone can see.

"You who read this frank confession must not think that I take pride in parading these

misdeeds before you. Now, as the years decline and the gathering gloom of life's November separate the real from the shadows, I renounce and abjure all deviations from the spirit of right, and sadly come to my mind these words:

"Of all sad words of tongue or pen,
The saddest are these, 'It might have been.'"

A. D. HARD.

Marshall, Minn.

TONSILLITIS — THE LOCAL TREATMENT

Here, very briefly, is my experience with tonsillitis and, in a general way, my course of treatment:

The diagnosis, as a rule, is readily made, of course. The duration of the attack will depend upon the treatment; in a large proportion of the cases treated by me, it is cured in from twenty-four to thirty-six hours. I proceed as follows:

On my first visit, I swab the throat with a 10-percent solution of nitrate of silver; and not only do I paint the tonsils, but also the anterior and posterior pillars and the uvula. These details are important. Internally, I give calomel, 1-6 grain every hour, for six doses (in the evening); also the following mixture:

Tincture of ferric chloride.....m. 30
Potassium chlorate.....grs. 10
Glycerin.....drs. 3
Water, enough to make.....ozs. 3

Directions: Give 1 teaspoonful every hour.

This is the promptest and most reliable cure I know of.

To prevent tonsillitis, always wear rubber overshoes when going out in damp weather.

V. P. PISULA.

Everson, Pa.

TUBERCULOSIS TREATED WITH EMETINE

I wish to report two additional cases of tuberculosis in which emetine gave excellent results. See my article in January *CLINICAL MEDICINE*, page 82.

Case 1. Ralph A. I gave tuberculin, alteratives, eliminatives, and other remedies for a whole year. Some tubercle-bacilli were observed in the sputum and the feces. There was alternate constipation and diarrhea. Sometimes the feces were mixed with pus and blood, and this I had been unable to control until I gave emetine hydrochloride once a

day and, later, every third day for about two months. The stomach and bowels became normal, the tubercle-bacilli disappeared, and the man is gaining every day. I may save three-fourths of one lung and one-fourth of the other.

Case 2. Mrs. S showed a strong reaction under a test for tuberculosis. There was cough, emaciation, a daily rise of temperature, and dysenteric stools, which contained blood and pus. I gave codliver-oil and the hypophosphites, also one pint of cream every day. In addition, I administered emetine hydrochloride, one dose every day for twelve days, and then every third day for six doses. Result: No more tubercle-bacilli, digestion and elimination good. Is going to get well.

I am snatching time to write this when I ought to be in bed, but I want to let the "family" know.

T. M. STEWART.

Canistota, S. D.

[Whether or not emetine will prove of great value in tuberculosis, remains to be proven. As a rule, it probably is not wise to continue emetine injections more than two weeks without intermission.—Ed.]

THE CRITIC AND GUIDE

The Critic and Guide comes out in its January issue in a larger and improved form. It now has incorporated with it our old journal-friend and brother, *The Physicians' Drug News*, thereby adding some 5000 new subscribers to its list of readers.

The Critic and Guide is one of the journals which I *always* read. I do so for several reasons: First, because I find so much in it with which I disagree; and healthy disagreement is one of the best mental tonics in the world. Another reason why I like *The Critic and Guide* is because Editor Robinson has the "punch"; he says what he thinks without reservation, and when he hits at an evil (or what he believes to be an evil) he strikes hard. Still another reason why I like it is because it discusses questions which most men are afraid to consider at all, and prominent among these are problems of sex.

In the new *Medical Critic and Guide*, there is a larger percentage than formerly of short, practical, helpful therapeutic suggestions. This will add enormously to its value and popularity. I wish every reader of *CLINICAL MEDICINE* could read the editorials on "War and Venereal Disease," "Too Much Cesarean Section," "Something About Smoking," and

"Excessive Drinking Among Women"—to mention a few only. But, really, there isn't an *uninteresting* article in the whole number.

MEDICAL CONTROL OF A GOVERNMENT IRRIGATION PROJECT

Although for four and one-half years the government town of Arrowrock was maintained 20 miles above this city (Boise, Idaho), while construction of the great Arrowrock dam—the highest in the world—was in progress by the United States Reclamation Service, there did not occur one death from contagious disease. This is a remarkable fact, say health-experts, when considering that during all that time there were employed approximately 20,000 men. Arrowrock camp had a maximum population of 1500 people; but, completion of the dam now finds it vanished like the Arab and his tent.

The government has about finished its work there, but the buildings erected, to house the superintendents, mechanics and laborers, have been razed and salvaged. What was once a magnetic scene of activity, as men, divided into three shifts, performed the work to wedge a massive concrete, arch-shaped structure between canyon-walls a mile high across the Boise River channel, blocking the flow of that stream into a reservoir 18 miles long, is no more. Today, the dam stands 348.5 feet above a bedrock of granite, to which it is anchored 91 feet below the river-bed. Impounded back of it is enough water to flood the entire city of New York and suburbs with a foot of water.

All through work on the dam, both in the excavating for it and on and about its sides, as it started to rise above the base, the loss of life was comparatively small during the four years it took to build it; less than a dozen men so employed being killed. The government exercised every care to safeguard those employed, both in actual construction and in the camp or town of Arrowrock itself.

All men before being employed were given a brief physical examination by the resident physician, for the purpose of determining their physical fitness for the work and to eliminate undesirables. Whenever doubt existed as to a man's condition, a more complete examination was made.

A well-equipped hospital was maintained and a competent physician was on duty to care for cases of sickness or injury. The resident physician was also the chief sanitary officer, and the camp-foreman carried

out his instructions in all matters pertaining to sanitary conditions or general prophylactic measures. The maintenance of all camp-buildings and grounds in a neat and sanitary condition was carried out under the direction of the camp-foreman. All bunk-houses, dormitories, and other buildings were swept and cleaned every day by the janitors and camp-men. These buildings were scrubbed out about every two weeks, and the bunk-houses and dormitories, including the springs and mattresses, were fumigated, by spraying with a liquid disinfectant, about once in two or three weeks. At frequent intervals, all sleeping-quarters were fumigated by burning sulphur.

Outside of the main camp were two hundred or more private residences, erected by foremen, mechanics, and laborers. In order that the general health and sanitary conditions of the whole community might be kept up to standard, health-rules were enforced that applied to all private residences as well. Airtight metal garbage-cans were provided about the camp and the residences, and all garbage was deposited in them, collected every few days, and burned. The mess-house refuse was fed to the hogs. The most scrupulous care was exercised in keeping the privies sanitary. All entrances were screened against flies, and, besides, these pests were caught in specially prepared traps. It has been humorously remarked by men who worked there that once a fly was seen on the premises.

Pure mountain-water was supplied from a creek, being carried in a flume to the camp, deposited in a tank, and thence piped to practically every building. A sewerage system with septic tank was installed, serving all buildings and discharging into the river below. Sickness was, in this way, held down to the minimum, and there were no epidemics of any kind. There occurred but one case of typhoid-fever, and it is believed that it originated outside the camp.

The camp had its commissary, its large mess-houses, serving as high as 60,000 meals a month; its club, reading-rooms, picture-shows, and the like, to keep those employed happy. Liquor was banished.

The net result was that the building of the dam, considered an engineering masterpiece in irrigation, was done in record time. Work started on it in 1911. Five years was the estimated time for completing it and to impound water behind it the year following. It was constructed, however, in four years and water impounded this season—the fourth

year. The dam derives its name from the fact that a high granite cliff on one side was used by Indians, in the early days, into which they shot their arrows to inform members of the direction they were traveling.

The total cost of the dam was \$5,000,000. The estimated cost was \$7,500,000. The water behind it is used to irrigate lands in the Boise project in western Idaho comprising 240,000 acres, all of which is owned either privately, by the state or under homestead entry by actual settlers. The dam weighs over a million tons. If placed a ton upon a 20-foot wagon, the line of wagons would reach from San Francisco to New York and double back to Cleveland; if piled 10 feet square, the column would reach a height of 29 miles. The water in the reservoir is 200 feet deep; it would submerge Boston 8 feet; Chicago, 2 feet, and the entire District of Columbia 5 feet deep.

All Idaho joined in the dedication of this dam, as completed October 4, with appropriate dedication-exercises. The ceremony attracted thousands of visitors from many states, and also many settlers from the project.

H. A. LAWSON.

Boise, Idaho.

INJURIOUS INSECTS

No doubt that many kinds of insects are not only unpleasant to the human body, but certainly also cause and communicate diseases. That this problem has not received more attention is because only a few men are devoting themselves to research-work of this nature. Metchnikoff, Patton, Margo, Strauss and Girault are among the most prominent workers on this subject.

Professor Metchnikoff of the Pasteur Institute of Paris states that bedbugs are concerned in conveying intermittent fevers, anthrax, and also cerebrospinal meningitis. I remember about a small town of Austria where endemic gastric catarrh appeared and that bedbugs were considered the cause of it.

It has been found experimentally that mice, living as well as dead, very often are attacked by bedbugs. Certain observers (Strauss, Girault) claim that rats spread plague, septicemia and all kind of infectious diseases. Castellani mentions that in places where many flies exist diarrhea and dysentery occur. Flies also are the cause of some skin diseases. In my own immediate neighborhood I saw recently a case of erythema multiforme and urticaria attributable, no doubt, to a swarm

of flies. The patient was a child of 2 1-2 years, and as soon as the house was free of the pests the trouble was over quickly, without medical intervention.

The *cimex columbarius* causes what is known as "dog-disease." The patient complains of headache and constipation, experiences rise of temperature, the eyeballs become tender and there is a characteristic suffusion of the conjunctiva. Mild bronchitis, gastric tenderness, cramps, and epistaxis are the chief symptoms, together with a rash-like urticaria or erythema multiforme. The disease lasts two to four days and terminates by crisis, but convalescence is slow and there may remain a pronounced anemia.

Wellmann draws attention to the noxious larvae of certain coleoptera and lepidoptera, some of which may cause severe pain and skin eruption, while nervous symptoms may follow contact with stinging caterpillars. He has also a note on two species of myriapods, and states that their poisonous secretion probably is from the foramina repugnatoria located at the sides of the segments and which look like tracheal stigmata. Someone has had myriapods sent from the southern Sudan, some of which are said to be much dreaded by the natives, and these specimens are being determined by Professor Werner, of Vienna.

The *cimex rotundatus* is distributed throughout Europe and North America, and its bite causes terrible itching, general irritation, and, finally, eczema.

Ants spread cholera, dysentery, and enteric fever; and, indeed, all those diseases due to contamination of food. There is definite proof that ants convey the germs. Many interesting cases are mentioned in the literature, in which ants were known to act as disease-carriers.

S. R. KLEIN.

New York, N. Y.

DEATH OF DOCTOR MILLICAN

We are sorry to announce the death, at the age of 62 years, on November 28, in London, of Dr. Kenneth W. Millican. Doctor Millican had many friends in this country, where he made his home for a number of years. In 1897, he became associate editor of *The New York Medical Journal*, later, editor of *The St. Louis Medical Review*, and still later, member of the staff of *The Journal of the American Medical Association*. In 1911, he returned to London, where he became associate editor of *The Lancet*.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

THE following paragraphs conclude the excerpt from the address of President Cabot at the last meeting of the Mississippi Valley Medical Association, the majority of which was printed in this department last month.

Doctor Butler asks us to apologize for the shortness of his contribution to this issue. He has been suffering from the prevailing epidemic of grip and for a week or more has found it impossible to do literary work. His usual quota of the "good stuff" will appear next month.—Ed.

Personally, I have an abiding dread of state-medicine in a democracy, because of my recognition of the essential inefficiency of democracy. Whatever may be the beauties of this form of government, efficiency is not among them; and, though I quite realize that it is possible to worship efficiency as a goal to far too great an extent, I also recognize that inefficiency in medicine may well prove a fatal defect. I can not construct any theory of state-medicine in a democracy which does not appear to me likely to ruin, not only the democracy, but medicine.

Therefore, I look forward to the development of group-medicine with the hospital as its center, such hospitals to be under the management of trustees who, it is to be hoped, will take their duties much more seriously than do most trustees of today.

It will probably be objected that this will involve the treatment of all patients in institutions, but this will not of necessity result, unless it be thought desirable. There is no substantial objection to the hospitals' staff making visits at any reasonable instance, without loss of the important advantages of medical grouping. It does not even seem to me impracticable to conduct country practice in sparsely settled districts upon a hospital basis. It would seem to me entirely feasible to use the towns and smaller cities as centers from which medicine should radiate. The younger members of the organization would do the work in the outlying

districts, living there, if necessary, but always keeping in close touch with their hospital-center and being promoted as experience and opportunity should dictate.

It would thus come about that the younger practitioners would have thrown upon them the more laborious work, while the older members of the group would occupy the positions requiring sounder judgment and fuller development, but neither the activity nor the enthusiasm of youth.

In this way we might preserve all that is best in competition for that scientific achievement. We could undoubtedly permit the development of individuals along the lines best suited to their peculiar capacity and get from each what he was best able to give. We should avoid the scandals of inhuman charges and of indecent exploitation of suffering humanity by the sharks of the profession, and we might well avoid the tragedy by which the impecunious young doctor must select general practice, for which he is ill equipped, because he can not afford to devote himself to the pursuit of pure science, for which he is best fitted.

I can not leave this subject without admitting that I am not unmindful of the undoubted defects of the system which I have just described. I do not for a moment overlook the danger that we may come to regard efficiency as a god, that we forget that the individual is a patient and think of him only as an instance of disease. I am not unmindful of the danger of losing that broad culture which was developed in the physicians of the last generation. But these dangers seem to me largely avoidable if clearly appreciated. I can not doubt that the pursuit of science will always bring out inherent qualities of greatness. I can not doubt that the care of the sick will always develop the humanities, and I can not doubt that a profession which has for its sole aim and object the mitigation of the sufferings of mankind will attract to itself men endowed with the same inherent possibilities for greatness that have always characterized the followers of Aesculapius.

TO A DISSECTING-ROOM CLOCK

Beat on, thou clock (Time's heart) on th' wall,
O'er the hearts that are stilled below;
With thy systole and diastole
Eternities ebb and flow.

How still, on their chilly beds of stone,
Lie they of Life's lowest rung!
From the fitful fevers of World and Flesh,
Resting, the old and young.

Could we draw from their naked souls the veil
(As we strip their flesh) with a hand,
We should see our brothers, under the skin,
And seeing, would understand.

What hopes were locked in thy stony breast,
Old man, ere thy sun went down?
Or you, some one's girl, who, with reckless hand,
Tore the blossoms from Life's fresh crown?

But not for these, by thy hands, old clock.
Will the Future's veil be rife;
For, hours are dead and Time is not
In this valley of shadows—of Life.

Beat on, thou clock (Time's heart) on th' wall,
O'er the hearts that are stilled below;
With thy systole and diastole,
Eternities ebb and flow!

HILTON A. WICK.

Philadelphia, Pa.

IF IT 'TIS, AS IT'TIS, IT CAN'T BE ANY
TISSER

What's the use to stew and fret
And worry like a sinner,
'Cause in the chase or in the race
You don't come out the winner?
So, don't you cry when hard you try
The mark to hit—and miss her.
If it 'tis

As it 'tis,
It can't be any tisser.

Altho' you're broke, just smile and joke.
And never wear a frown.
When you're flat upon your back
You can't get further down.
Things can't be no worse, you see,
And you have this commiser',
If it 'tis

As it 'tis,
It can't be any tisser.

So, work away, through all the day,
Altho' it takes your muscle;
You sure will get a fair show yet
If you just get up and hustle.
Don't you mind, altho' the wind
Does blow a perfect blizzar'.
If it 'tis

As it 'tis,
It can't be any tisser.

Make the best of what you've got,
Don't say, "This life is bitter."
Keep up your nerve and never swerve,
Nor ever be a quitter.

Altho' you're poor, don't you get sore,
And worry out your gizzar'.
If it 'tis

As it 'tis,
It can't be any tisser.

If it is as it 'tis,
It *can't* be any tisser.
What's the use, you silly goose,
To worry out your gizzar'?
For, if you to fret and stew and sweat,
It makes you still more miser'.
If it 'tis

As it 'tis,
It can't be any tisser.

You may howl and you may growl
'Till everything is blue,
Providence aint agoin' to run
A special train for you.
The world won't shake each step you take:
To speak still more expliciter:
If it 'tis

As it 'tis,
It can't be any tisser.

What is to be for you and me,
I don't know, I confess;
But, if we do what we orter to,
Things will turn out for the best.
So do not go and pay out dough
Consultin' some old wizar';
If it 'tis

As it 'tis,
It can't be any tisser.

Keep up the fight with all your might,
You'll win out at the last.
What is to be of course will be,
Tho' it never come to pass.
So, do your best and then rest
Up easy, and consider:
If it 'tis

As it 'tis,
It can't be any tisser.

G. W. BURNER.

Johnstown, O.

APHONIA CURED BY STEREOPLASTIC
MEANS

Two interesting instances of the cure (more or less complete) of loss of voice were reported last year, at a meeting of the Laryngo-rhinologic Society of Wien. (*Wien. Med. Woch.*, 1914, No. 49), by F. Neumann and D. Kofler, respectively. The cause of the aphonia in one case (of 20 years' duration) was, one of the vocal cords being scarred and degenerated as a result of diphtheria in childhood; in the other, an atrophied vocal cord following paralysis [also diphtheritic?].

The cures were effected by injecting paraffin into the disabled and shrunken cords, thus causing the bands to approach and, so, to admit of their vibrating. The paraffin, in the more successful case, had a melting point of 42° C.

Among the Books

PRACTICAL MEDICINE SERIES

The Practical Medicine Series. Edited by Charles L. Mix, A. M., M. D. Series 1915. Volume III. The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, M. D., Albert H. Andrews, M. D., and Wm. L. Ballenger, M. D. Chicago: The Year-Book Publishers. 1915. Price \$1.50.

The year 1914 was not especially prolific of ophthalmic investigation in any particular department, unless one excepts such subjects as glaucoma and the conservation of vision; the world war is probably responsible for the marked decrease in the output of literature on the eye and its diseases. Nevertheless, there has been more than enough of interesting and important articles, monographs, and other publications, to supply, in review or abstract, several volumes of this series. The same is true of laryngology and otology. The editors, in fact, confess that their embarrassment has been the embarrassment of riches rather than of poverty; and they have been obliged to omit, for lack of space, the good work of many contributors. Not the least interesting feature of the book is to be found in the comments appended to the abstracted accounts of papers by others which the editors have felt called upon to make.

PRESTON: "FRACTURES AND DISLOCATIONS"

Fractures and Dislocations. Diagnosis and Treatment. By Miller E. Preston, A. B., M. D. With a Chapter on Roentgenology by H. G. Stover, M. D. With 860 illustrations. St. Louis: C. V. Mosby Company. 1915. Price \$6.50.

The avowed object of this book is to offer the reader a working knowledge of the subject in as few words as possible, avoiding for the most part all theories and arguments which are void of practical value for the surgeon who has to diagnose and treat the various injuries met with in actual practice. The author has endeavored to make the reader an eye witness of the various deformities, as they appear immediately following

the accident, on the ground that there is much to be learned by inspection in the average case of dislocation and fracture and that the information thus gained may be put to immediate use without waiting for the x-ray returns. In pursuance of this policy he has illustrated the book very plentifully with photographs, taken, to be sure, under rather unfavorable circumstances, but still clear enough to familiarize the reader with the appearance of the various clinical deformities.

The time-honored classification of fractures under one heading and dislocations under another has been abandoned, and the more practical method adopted of considering the injuries according to the anatomical region in which they occur. That the value of the x-ray in this branch of surgery is not belittled by the author is indicated in the inclusion of a separate section on this subject by Doctor Stover, of the University of Colorado. The practitioner is emphatically recommended to make roentgenology a routine measure in dealing with bone cases.

BETHEA: "MATERIA MEDICA"

Practical Materia Medica and Prescription Writing. With illustrations. By Oscar W. Bethea, M. D., Ph. G., F. C. S. Philadelphia: F. A. Davis Company. 1915. Price \$2.00.

As the title implies, this book is devoted chiefly—indeed, almost exclusively—to the practical aspects of the subject; to the preparation, selection, compounding, and prescribing of remedies.

As the author very pertinently points out in his preface, the therapeutic and pharmacological phases of the subject are exhaustively treated in many excellent volumes and are ably taught in medical colleges, but the practical part is often neglected. Both books and teachers too often neglect to impress upon the student what preparation of a remedy will best meet the demands of the particular conditions, the precautions to be observed in employing them, how to prescribe them correctly, whether alone or in combination, and if in combination, with what forms and preparations of other agents, what is the

safest and most convenient form of administration, and so on, and so on.

Such instruction is the particular object of this book, and in this capacity it will, we feel sure, appeal to the student, to the teacher, and to the general practitioner who is obliged to be himself the student and the teacher.

ORMSBY: "DISEASES OF THE SKIN"

Diseases of the Skin: For the Use of Students and Practitioners. Illustrated with 303 engravings and 39 plates. By Oliver S. Ormsby, M. D. Philadelphia and New York: Lea & Febiger. 1915. Price \$6.00.

Doctor Ormsby is the man upon whom the mantle of James Nevins Hyde and of Frank Hugh Montgomery fell when these two illustrious dermatologists passed away. He confesses his indebtedness to the works of his distinguished colleagues in the preparation of this book. Many illustrations have also been reproduced bodily from Doctor Hyde's textbook.

The present work is thoroughly up to date. All advances are duly noted. The literature of dermatology has been carefully searched and reviewed, in order that the pages of this treatise may reflect the subject as faithfully and completely as the limits of a single volume will permit. The newer methods of diagnosis and treatment, so far as they are of proven value, are incorporated, together with the results of recent research in etiology and pathology. Opinions of experienced dermatologists are freely quoted.

The scope of the book is extended to include diseases of the hair, the nails, and the mucous membranes, all of which, of course, properly belong to the skin. The balance between the academic and the clinical phases of the subject is well preserved, with here and there a slight excursion into the historic and bibliographic. The physical features of the volume are excellent, and do the publishers great credit. The illustrations are especially worthy of mention; and, of course, illustrations are a peculiarly important part of a work on skin diseases.

ROBINSON: "SEXUAL IMPOTENCE"

A Practical Treatise on the Causes, Symptoms, and Treatment of Sexual Impotence and Other Sexual Disorders in Men and Women. By William J. Robinson, M. D., Editor of *The Critic and Guide* and *The American Journal of Urology and Sexology*; Author of "Never-Told Tales" and other works.

Fourth edition, revised and enlarged. New York: The Critic and Guide Company, 12 Mt. Morris Park, West. 1914. Price \$3.00.

There are very few physicians in this country who, if they were requested to give the name of *the* authority on the sexual diseases, would not reply, almost involuntarily, "William J. Robinson." Anyone who has read his book on "Sexual Impotence" will understand at once why this would be the answer. Doctor Robinson writes of things with which he is familiar. He, therefore, is in a position to enrich his pages with scores of illustrative cases, and, so, the answers to the questions arising in the reader's mind are found in some absolutely illuminating clinical experience. It is this familiarity with the subject, breathed into every paragraph and every page, that makes this book the most practical and most comprehensive, as well as the most interesting, work on the subject that this reviewer ever has seen.

If you were to ask this writer as to the distinguishing features of the book, he would say, the absolute candor with which Doctor Robinson discusses every phase of his subject. He is never influenced by precedent, and consequently his conclusions are frequently refreshingly different from those of other writers upon sex-subjects—as when he points out that masturbation is not inevitably harmful to the "victim"—and to this subject he devotes ten of his most interesting chapters. Among other topics to which much attention is given may be named: coitus interruptus and its variants; pollutions and spermatorrhea; the causes, symptoms, clinical varieties, and treatment of male and female impotence; sterility; and priapism. The final chapter is devoted to prescriptions.

STARLING: "PHYSIOLOGY"

Principles of Human Physiology. By Ernest H. Starling, M. D. Second edition. With 566 illustrations. Philadelphia: Lea & Febiger. 1915. Price \$5.00.

Under the formalism of anatomy, the living body appears as a sort of set piece, much the same as the cadaver, which one dissects, except that the machinery in the cadaver has stopped, filled, as to its vessels, with a given quantity of blood, which is kept in motion by an automatic pump, and wired with an intricate scheme of nerve trunk and exchanges.

With the study of physiology, however, the subject takes on an entirely different aspect. It becomes apparent that the body, instead of being a static structure, is rather

in the nature of a visible dynamic process—a short-circuit arc, so to speak, between two poles, the higher and lower potentials of which consist, respectively, of the anabolic and katabolic influences of its environment, whose structural form represents simply the plastic molding of the medium into lines of least resistance and whose coefficient of vitality may be expressed by the net potential divided by the resistance. The structural forms are the ultimate reactions of the cells to the kinetic dynamism that constitutes what we call life; they are the paths blazed by this dynamism between its two poles. Function determines structure; and function is the kinetic adaptation of the parts to the welfare of the whole.

All of which simple and unifying conception of the human body finds illumination in Professor Starling's masterly work on physiology. It is, in very deed and truth, the work of a master. Every structure in the body is dragged, as it were, to the tribunal of physiology, to determine its functional value from this larger standpoint. Physiology is reduced to elemental principles and indisputable links established between the elemental functions and the higher functions of life.

It is needless, in these days, to point out the practical value of such a physiology. He is the most skilful and rational physician who can discern the course of pathologic processes and apply the remedial agencies at a point nearest to their functional origin and furthest from their structural effects. The signs of the time point strongly to a state of knowledge, not so far distant, when all disease shall be reconnoitered and repulsed at these functional outposts and the sphere of medical influence be brought within that field which lies between normal function and abnormal structure—the field of pathologic physiology. To the attainment of this state, works like that of Professor Starling make an enormous contribution. This latest edition of his admirable book may well be characterized as the last word in physiologic research, especially in the realm of metabolism.

GANT: "GASTROINTESTINAL DISEASES"

Diarrheal, Inflammatory, Obstructive, and Parasitic Diseases of the Gastrointestinal Tract. By Samuel Goodwin Gant, M. D. Illustrated. Philadelphia and London: The W. B. Saunders Company. 1915. Price \$6.00.

Explaining his motive in writing this book, the author says that many times he has de-

sired information concerning certain phases of diarrhea and other intestinal disorders, but could not find it except by scanning an enormous amount of current literature; a task requiring considerable time and labor; and eventually repeated experiences of this kind convinced him that a compilation covering diarrhea in all of its phases would prove useful alike to internist, pediatric, and surgeon. He was asked many times by physicians why he was devoting so much time and space to so generally recognized and easily controlled a disease, and his answer was, that his experience as a teacher had taught him that physicians generally do not understand the various types of diarrhea, their significance, and their treatment.

Here, then, we have both the motive and the *motif* of Doctor Gant's work. It presents to students and practitioners a complete, yet practical, treatise on the etiology, symptoms, diagnosis, and treatment of acute and chronic diarrhea and allied diseases of the gastrointestinal tract, all arranged in logical and convenient form for quick reference. The relation of parasitic diseases to diarrhea is fully discussed, and there is a special chapter on examination and diagnosis. Doctor Gant is a specialist who writes all too seldom and too little. But when he does write, the product is always well worth while; and so it is in this instance.

SHATTUCK: "MEDICAL TREATMENT"

A Synopsis of Medical Treatment. By George Cheever Shattuck, M. D. Second edition, revised and enlarged. Boston: W. M. Leonard. 1915. Price \$1.25.

This work is an attempt to offer, clearly and concisely, a set of sound principles of treatment, based on well-known pathology. The methods described are selected from those which have been tried at the Massachusetts General Hospital or in private practice. Most of them have been taught by Prof. F. C. Shattuck, Dr. William H. Smith, or by others on the staff of the Hospital or of the Harvard Medical School. The author does not pretend that any of these men would subscribe fully to everything here set forth or that further advances will not require revision.

In this edition, as in the first, completeness has been sacrificed to brevity, but new material has been added and many alterations have been made. More reliance than before has been placed upon personal experience, although the information about salvarsan has been derived chiefly from recent literature.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6164.—“The Old Problem of Propagation.” V., Arkansas, writes: “Some years ago, women wanted me to ‘do something’ to stop them from breeding. Now they want me to start them breeding. Can you tell me what to do or give them? I am serious about this.”

The present writer is inclined to believe that women today feel very much as their grandmothers did; that is to say, some desire maternity; others dread it. Not a year passes in the practice of the average physician without his encountering requests to prevent the bearing of children and equally urgent appeals to produce fruitfulness.

A very few moments’ consideration will, we are sure, cause you to realize that the very procedure that would prove effective in one woman’s case would fail with another. The cause of nonfecundity must always be ascertained, and, in the absence of definite knowledge as to the woman, it is absolutely essential that the condition of the man receive attention. For, it must be borne in mind that women who had been “sterile”—that is, had no child by their first husband—have borne a child within a year with a different mate. It is an interesting fact that a woman may fail to conceive by one man, yet, bear children to another; yet, the same man, unable to impregnate this particular woman may prove capable of impregnating any number of other women.

On the other hand, the man may (usually through an earlier improperly treated Neisser-bacillus infection) be afflicted with azoospermia. Frequently malposition of the uterus is responsible for sterility in the female; then, also, the vaginal or cervical secretions may prove fatal to the most active of spermatozoa.

The subject, unfortunately, is altogether too vast to be intelligently considered in the scope of this department. To anyone really interested, we suggest the study of Robinson’s

“Treatment of Sexual Impotence and Other Sexual Disorders in the Male and Female.”

QUERY 6165.—“Tumor Near Bladder.” F. C. F., Illinois, has submitted a specimen of urine, for examination, with the following brief history of the case: “A farmer, 69 years of age, complains of frequent urination, a burning sensation when urinating, and pain in the lower region of the bladder. He has no fever. Percussion and palpation disclose dulness or flatness on the right side of the bladder region, where also an appreciable mass is felt. The abdomen is slightly swollen. The patient feels weak and exhausted. He has external ulcerated hemorrhoids and a prolapsed rectum. I fear malignancy.”

Unfortunately, you omitted to state the amount of urine voided in a 24-hour period, consequently we are unable to estimate the urea and the total solids. We note that the reaction was strongly alkaline, and there were present considerable numbers of colon-bacilli, staphylococci and streptococci.

The exact nature of the “mass” in the abdomen, of course, must be ascertained. You do not definitely state its location. There may be present a cystitis and a pericystitis.

It would be well, we think, to dilate the anal sphincter, inject the hemorrhoids, and correct the prolapsus ani.

The strong possibility of prostatic involvement in this case must not be lost sight of.

On general principles, we suggest the injection of an appropriate bacterin, one dose every third day; also, the internal administration of a combination of the following: Hexamethylenamine, grs. 5; acid sodium phosphate, grs. 10; tartaric acid and sodium bicarbonate, for efferecence, also, arbutin, gr. 1; this taken every four hours with a glassful of thin barley-water. Your patient might also advantageously receive papain

pepsin, and berberine before meals, and the arsenates of iron, quinine and strychnine, with nuclein, after eating.

Hamameloid, gr. 1-3 to gr. 1-2; collinsonoid, gr. 1-3, and eupurpuroid, gr. 1-3, may be given in alternation with the hexamethylenamine and arbutin.

If the patient objects to radical treatment for the hemorrhoids, try moderate dilatation of the sphincter (digital), and prescribe a mildly astringent ointment to be applied after stool and on retiring.

Drastic purgatives or even very active laxatives are, of course, undesirable. If there is any difficulty in securing free evacuation of the intestine, order a phenolphthalein compound tablet, to be taken with a glassful of water, at bedtime. Purified petrolatum (pure or in emulsion), when retiring, will also meet the conditions. If there is pericystitis, suprapubic or perineal drainage is essential.

QUERY 6166.—“Shall I Dispense?” L., Ohio, writes: “I do not know what to do about laying in a stock of drugs for dispensing-purposes; in fact, somehow the idea of dispensing does not appeal to me strongly and I am trying to avoid it as long as possible. Two firms have left at my office an assortment of tablets, capsules, and such, these to be paid for only as used. Somehow, I feel that, if I am to do any self-dispensing at all, I'd prefer to use the active principles. I should like to have you suggest a not too extensive list of remedial agents most necessary for a doctor in general practice to carry. So far, I have been using but very few of the trial preparations mentioned.”

If you decide to do your own dispensing, we can assure you that the alkaloids and allied products, if intelligently used, will prove success-makers. CLINICAL MEDICINE has, during the past year, published several articles covering this very ground rather fully. The list of remedies named by Doctor Candler, in his paper entitled “Making Good in Medical Emergencies” (beginning in January, 1914, CLINICAL MEDICINE), can hardly be improved upon; still, for general dispensing, various other standard preparations must be carried in stock.

Obviously, doctor, it is extremely difficult for one man to make a perfectly satisfactory selection for another practitioner. In the first place, it is for you yourself to decide just how much you are prepared to invest. In this connection, please remember that it is economical to buy in quantity; and, as practically all the standard active-principle

preparations do not deteriorate, it is quite safe to do this. If you invest in one of the larger medicine-cases offered, you will be in position always to give the right remedy for virtually any condition confronting you at any time and wherever you may happen to be; while, with a well-selected supply of standard remedies at your office, you can maintain effective medication, secure definite results, and be independent of the druggist's stock.

If you desire to make out a list of simples and compounds such as appeal to you, it will give the present writer pleasure to revise it and suggest such alterations as experience has taught him might prove advisable. Meanwhile, you will doubtless be interested in the article entitled “Palatable Prescribing for Children,” which appeared in the September, 1915, number of CLINICAL MEDICINE.

QUERY 6167.—“Adenitis of Uncertain Origin.” R. K. M., Oregon, forwards a small fragment of tissue taken from the floor of an ulcer located in subcutaneous tissue. The disease involves the lymphatic glands in the cervical region and is said to be a sequel of an attack of smallpox five years ago. There are cicatrices of older ulcerations along the lymphatics in this region, showing that the superficial cervical glands were involved. The existing trouble, we are told, seems to have followed along the structure of the mandible, also involving the lymphatic glands adjacent to the superior maxilla, and there are signs of purulent matter in the antrum of Highmore. Further:

“The present outbreak of activity dates from July 4, 1915, with acute neuralgic pain in the right side of the face. The suffering has been extreme, but only within the past two weeks has there been any sign of purulent accumulation in the antrum; that is, discharge in the nasal cavity. Will you kindly have a test made of the specimens I am sending, and send me the pathological finding; also tell me what serum I should use—I strongly fear tetanic convulsions.

“The ulcer is extremely slow in its progress, owing, I believe, to the blood depravity existing for months. The nervous phenomena are severe and the nervous cycles are extremely hard to manage. The pain yields to morphine (1-2 grain) and acetanilid compound tablets, given once or twice in the twenty-four hours. Small doses of hyoscine and morphine were given, earlier, for the pain, but are not now required. Acid fruits seem to disagree, as does also all protein-bearing food.

The temperature has been subnormal throughout. The small fragment is the only specimen I could procure, as the patient will not permit making a scraping for examination.

"My location is in central Oregon, where access to hospital advantages cannot be had. Physicians are not numerous and drug supplies not easy to procure, on account of the primitive transportation and distance. Any indicated biological serum would be appreciated. I greatly feel the need of your report on the pathology of the case."

The specimen sent, unfortunately, was altogether too small to make a section properly; however, you seem to have to deal with a somewhat serious condition, and you may possibly have to eradicate the entire gland or even chain of glands. Unfortunately, you do not give us any idea of the age of your patient. It is a question, of course, whether the adenitis is really a sequel of variola; still, adenitis not infrequently follows rubeola, scarlet-fever, and other of the exanthemata. Occasionally after vaccination the axillary and more rarely the cervical glands may become involved. We assume that syphilis and tuberculosis can be excluded.

Send at once some of the pus and a blood smear, together with a specimen of urine (4 ounces from the 24-hour output, stating the total quantity voided) to your pathologist. If possible, under local or general anesthesia (not necessarily profound) incise or curette one of the more accessible glands and forward the entire debris.

The line of treatment you have followed is beyond criticism, although personally we should have been inclined to give very large doses of an iodine and nuclein, in alternation with phytolacca and echinacea. A very useful formula in such cases is: Calx iodata in association with arsenous iodine, nuclein and vegetable alteratives. Another useful preparation is one containing calx iodata, mercuric iodide and nuclein. However, in the majority of these cases of chronic suppurative adenitis, surgical intervention is absolutely necessary; not infrequently the most extensive dissection being called for.

An autogenous bacterin would be better, of course, than any stock preparation.

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QUERY 6168.—"Osteoma?" W. C., Texas, asks us to offer diagnosis and suggestions as to treatment in the following case:

"A woman, aged 27, married 12 years, mother of one child 6 years old, is pregnant in the seventh month. She has had three

abortions or miscarriages. Her mother died in puerperium, cause unknown; her father is in good health, as are also 4 brothers and 2 sisters. Six years ago, she had what was called gallstones. She has never been stout, and prior to her last pregnancy usually weighed 112 pounds; her present weight is 132 pounds. Her pulse is about 100, somewhat tense; her temperature registers 99° F. She says that she now feels as well (or even better) as she usually did, except for pain and some swelling in the right clavicle, and for these treatment is sought. She thinks that as far back as a year ago there has been a little tenderness in the bone, beginning at about the center; but in the last two months she has had two severe attacks of pain. The minor two-thirds of the bone is probably more than twice as large as the clavicle on the opposite side, feels hard, and is tender to touch. There is pain in the right shoulder, and this extends up the side of the neck to the ear whenever a severe attack comes on. Her urine appears to be normal."

It is possible that you have to do with an osteoma, and an Abderhalden test might prove informative. What is the character of the pain—dull and persistent or intermittent and lancinating? Is the skin of the affected area at all reddened?

When sending blood to the pathologist, it would be well to forward also a specimen of urine (4 ounces from the 24-hour output, stating total quantity voided), and also report fully the results of a very careful physical examination. Pay particular attention to the heart-sounds, blood pressure, area of hepatic dulness, condition of pelvic organs, and other data. Ascertain whether distress is caused by the elevation of or by inward pressure upon the humerus. Is the mamma on the right side abnormal in any way? Give us all the light you can, doctor, then we shall be in a position to aid you more intelligently.

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QUERY 6169.—"The Value of Pituitrin and Veratrine in Obstetrics." J. S. C., Oklahoma, reports a case of abortion as follows: "Multipara; pregnant two months; dead fetus; no pains; flowing thirty-six hours; very little dilatation. I gave 1 Cc. pituitrin, in one-half hour another dose, and again half an hour later the third dose of 1 Cc. Everything came away from the patient in less than two hours from the time she was first seen."

Describing another experience, J. S. C. writes:

"The woman, a primipara, was seized with eclamptic convulsions. The doctor first called saw her at about 8 o'clock in the evening, and he gave an injection of hyoscine and morphine and left. He was called again at about midnight, and now ruptured the membranes, and also gave an injection of 20 drops of Norwood's tincture of veratrum viride, repeating this after a while. Nevertheless, the woman had had six more hard convulsions, and I found her in the last one when I first saw her at about 5 in the morning—having been called in the meantime. In addition to the narcotic and the veratrum, I learned, she also had received a purgative of some kind.

"After I had looked over the situation, the woman was at once given pituitrin, the injections being repeated twice at half-hour intervals, and after that she had no convulsions. Chloroform was given for a few minutes, to deliver the head over the perineum.

"In reflecting upon this case and considering Doctor Williams' claim of the absolute worthlessness of veratrum in these cases, I have wondered whether the pituitrin had any effect in controlling the convulsions. I probably shall never see enough such cases to decide this question; it may be, however, that in this remedy we have something of value, unless the result in this instance was merely a coincidence. What has the editor to say?"

Your experience and reflections interest us, but we venture to express the hope that at the next opportunity you will give the active-principle veratrine instead of any of the fluid preparations of veratrum, and then compare the efficacy of the former. Of late, the present writer has given veratrine and lobeline sulphate in alternation, and the results secured have been most satisfactory. The efficacy of veratrine in eclampsia has been so definitely proven that the assertion of any single person to the contrary cannot be taken seriously.

That pituitrin, by enabling the physician to empty the uterus very quickly, may prove an extremely valuable remedial agent, is a reasonable assumption. We trust that opportunity will offer to enable you to test this matter further and that you will report your experience for the benefit of the profession.

QUERY 6170.—"Leukoplakia Buccalis." G. B. S., Iowa, writes as follows: "To be regarded as having ability is, as a matter of course, accompanied by its inevitable penalty;

and here is an illustration. A man about thirty-six years of age has leukoplakia, which persists, although he has quit smoking and chewing tobacco. I have tried to gather information about the treatment, but could find nothing of recent date. If anything is known to cure this vexatious trouble, I naturally should like to learn about it, and I come to THE CLINIC, where you generally hand out the right advice."

First, doctor, let us thank you for your expression of confidence—which we always endeavor to justify. As to leukoplakia, that is a rather intractable malady, and any therapeutic procedures, in order to be really effective, must be based upon a clear understanding of the conditions underlying it. This skin affection is not, necessarily, a manifestation of psoriasis or a symptom connected with syphilis; for, the condition often arises and many times exists independently of these and other maladies. Unfortunately, the actual cause (or causes) is not clearly established.

As to your case, can you positively exclude lues or has the patient at any time received mercury in large doses? Or, is there any pronounced trouble in the digestive tract? For, in this writer's opinion, gastric or gastrointestinal catarrh is often an important factor.

When well developed, as already stated, the malady is most persistent and rebellious. The use of tobacco must be strictly prohibited (as you have done); also, thorough elimination—renal, dermatic, and intestinal—must be secured and maintained. The mouth should be washed out frequently with a 1-percent solution of sodium chloride, while balsam of Peru is to be applied to the lesions daily or every other day.

Internally, we should administer echinacea and iris between meals; papain, and berberine before eating; and two or three Bulgarian-bacillus tablets three times daily, instructing that these be crushed in the mouth and then washed down with a little water.

If you will submit to a reliable pathologist a specimen of your patient's urine (remembering the data required) and give us a clearer clinical picture, we may be in a position to make more definite therapeutic suggestions.

QUERY 6171.—"Dysmenorrhea." O. H. S., Indiana, writes: "I have an unusual case of dysmenorrhea, and am needing your advice. The patient is a girl of 17, strong, and well developed. Mother died of tuberculosis.

I have been with her during several of her more troublesome periods. On May 6, 1915, I was called at 7 p. m., and found her suffering severely with pain in the sides, in the region of the ovaries. I used morphine, 1-4 grain, with atropine, 1-150 grain, hypodermically, then used chloroform for one hour before she was easy. On May 7, the pains returned, and it required some treatment to relieve her. The flow did not begin until the 12th, being six days, you see, from the beginning of pain, and it lasted four days. On the 19th I began treating her locally by dilating cervix, as best I could without chloroform, and using tampons. As a result, in July, the menses were normal and painless. She did not come again for treatment and went away on a visit, and while gone had a very bad attack again. On August 5 I was called, she being in terrible pain, almost having convulsions. I used morphine and hyoscine, then chloroform for one hour before she was easy. No flow. So, on the 8th, she washed some clothing and ran around in the hot sun. At 8 o'clock I was called, and she was suffering intensely, almost in convulsions. I used morphine, 1-2 grain, atropine, 1-150 grain, and two ounces of chloroform, and she was but a very little better in two hours. I put her on apiol and ergot and left her to see another patient. I believe she will die in one of these attacks if not relieved. Now, if you can advise me I will be very glad. How would it do to remove the ovaries?"

As you will readily understand, doctor, it is impossible for us to prescribe intelligently for your patient without a clearer idea of basal pathology. You say, "How would it do to remove the ovaries? This surely would correct the trouble." In our opinion, it would be little short of a crime to perform such an operation upon a strong, well-developed, healthy girl of seventeen, simply because she suffers from dysmenorrhea.

It is almost certain the trouble will disappear with marriage, and if you will make a careful examination and institute correct therapeutic procedures, it is more than likely immediate relief may be extended.

You state that prompt improvement followed partial dilatation of the cervix. Why not anesthetize the girl and do a thorough dilatation, then, if there is congestion, uterine or ovarian, apply local depletion with glycerogelatin suppositories, every second night, first flushing the vagina with two quarts of very hot water. Internally, give Buckley's uterine tonic, one tablet three

times daily for ten days before the expected period, and, should pain occur, gelsemine alternated with cannaboid and atropine. Should this not prove effective, a very small piece of extract of belladonna or a few minims of a fluid extract may be applied to the cervix. This should be placed in a pledget of cotton, which should be moistened, and then placed in contact with the os, and be held in place with strips of gauze. Almost as good results follow painting the cervix with a few drops of fluid extract of belladonna.

Before instituting any treatment, however, ascertain the exact condition of the pelvic viscera; note also pulse rate, condition of sphincter ani, and the like. Does the girl suffer from constipation? If so, correct it.

QUERY 6172—"Multiple Neuritis of Alcoholics?" W. T. S., Ohio, asks us to outline "the best treatment for the painful stage of multiple neuritis of alcoholics." His patient is a merchant, aged thirty-seven, who has used alcoholics for many years. He has taken the Keeley cure twice in the last two years, but relapsed. Finally he stopped drinking, a few weeks ago, after a steady five-months' carouse. Most of this time he has had neuritis. The pain changes its location from day to day—being felt on the top of the foot, in the ankle, upper part or middle part of the anterior tibial region, behind the knee, in the thigh or hip. After a paroxysm the affected part is exceedingly sore or tender for many hours. Besides general tonics, hepatic stimulants, and the like, phenacetin, the salicylates, and sedatives have been given.

The treatment is practically the same in all forms of polyneuritis of toxic origin, but, above all, whether owing to alcoholism, plumbism or mercurialism, the cause (if discoverable) must be removed. Rest in bed is absolutely essential, and, if the patient is strong enough, he may be given a daily hot salt-bath, the immersion lasting at least fifteen minutes. If this is out of the question, have the body sponged with hot epsom-salt solution (1 ounce to 3 pints of water); then given an alcohol-rub, and finish with brisk friction with a rough towel. Systematic massage and the frequent application of the sinusoidal or faradic current prove beneficial in many cases.

Internally, lecithin should be given, with strychnine valerate and strychnine hypophosphite alternately. Occasionally strychnine sulphate, 1-30 grain hypodermically,

three or four times daily, proves more effective. In some cases, solanine works beautifully. Also, of late, chromium sulphate has been highly recommended for this affection.

Small doses of aconitine and colchicine have proven useful in the writer's practice. Where the electric current is unavailable, a preparation of ichthyol, belladonna and aconite may be applied to the painful area. A good formula is: ichthyol, one dram; extract of belladonna, 30 grains; extract of aconite, 1 dram; liquor plumbi subacetatis, 1 dram; lanum anhydrous, 6 drams. Atropine and aconitine may, of course, be substituted for extract of belladonna and extract of aconite. Do not forget the value of saline elimination.

Externally, methyl salicylate, 1 dram to 1-2 ounce of lanolin, may be rubbed into the painful areas; but the high-frequency current (vacuum-electrode) undoubtedly produces the most rapid results, the pain frequently disappearing after one fifteen-minute treatment.

QUERY 6173.—“Possible Untoward Effects of Pituitrin.” A. P. South Dakota, has read that “very serious conditions” have followed after the administration of pituitrin, and now wishes us to tell him what those conditions are.

Our correspondent is correctly informed, as the following brief enumeration of the more important harmful consequences will show:

1. Rupture of the uterus or of the cervix has occurred several times, brought about by the sudden intense contraction of the womb and the forcible expulsion of the fetus through an undilated os.
- (2) A small fetus may, while in an improper position, be forced out into the vagina and, so, necessitate delivery with the forceps.
- (3) It has happened that the placenta has been detached prematurely, and this, naturally, given rise to profuse hemorrhage.
- (4) Undesirable systemic effects are among the possibilities, as will be seen by a study of the physiologic action of pituitrin.

In view of these facts, the present writer has come to the conclusion that this agent should never be administered until dilatation of the os is complete and the fetal presentation is positively known to be normal. Some-

times in the case of multiparas, although having a roomy birth-canal and with the fetus in satisfactory presentation, we have to deal with a so-called “lazy uterus.” It is here where pituitrin may be employed with advantage; but, like all active agents, it must be given intelligently, and then only when strictly indicated.

QUERY 6174.—“Hemorrhoids.” T. C. B., Kansas, writes: “I have met a number of patients who have been treated for hemorrhoids by a doctor who ‘puts something on the piles.’ It is said they disappear entirely in from twenty-four to forty-eight hours without pain or discomfort of any kind. The physicians who are using the method are not going to give the secret away so I ask information from your staff.

Frankly, we are at a total loss to explain this “cure.” No drug, or combination of drugs, with which we are familiar could possibly produce such results. It is impossible to believe that the application of any substances would cause the disappearance of a pile in forty-eight hours; moreover the remedial agent which would prove effective in internal hemorrhoids would not have the slightest influence upon external piles.

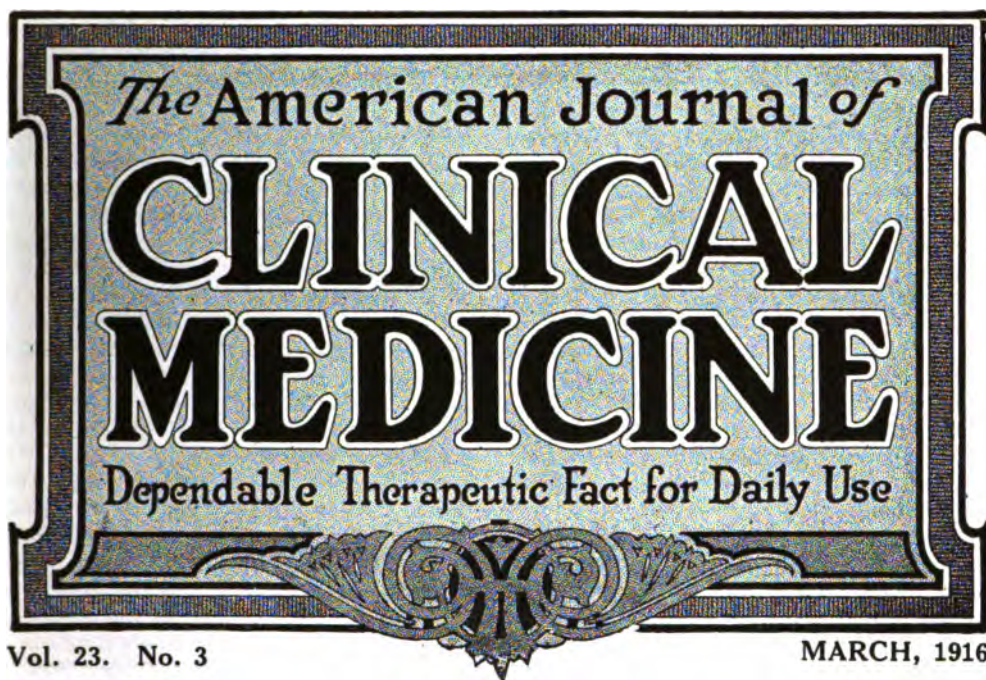
It would be well, we think, before accepting patients' statements to be quite sure that they did suffer from hemorrhoids, and also to find out whether the individual treating the tumors by such an application did not dilate the sphincter and before or after such anointing.

The writer has tried practically every combination of drugs, and he has yet to find any topical application exerting any very pronounced effect on even an ordinary hemorrhoidal tumor in forty-eight hours. We trust, you will endeavor to find out something more definite about this particular method of treatment. Who is the doctor who puts the “something” on? It is just possible he has learned to cone his thumb and fingers and replace therewith protruding hemorrhoids, anointing them with a cocaine ointment or some other anesthetic, sending the patients on their way firmly believing that they are cured.





"THE LITTLE PATIENT."—Michaud



Scarlet Fever—Pointers Old and New

IN one of his very excellent popular medical articles prepared for lay folk, Dr. W. A. Evans, one-time health commissioner of Chicago, reminds the readers of *The Chicago Tribune* that, unless special precautions are taken, the prevalence of scarlet-fever will increase, month by month, until the end of April, while, during May the number of cases will be practically the same as in April. This, he sets forth, is the rule for colder climates. In the warmer parts of the United States, the disease will be at its maximum in March, while May will see a drop similar to that which in the north occurs in June. In other words, although scarlet-fever may occur at any time of the year, it is most likely to become epidemic during the spring months, and we know that before this number of **CLINICAL MEDICINE** reaches our readers many of them will be strenuously engaged in the annual battle with this disease.

Unfortunately, we know, as yet, little about the essential etiology of scarlatina. For some time there has been a more or less general belief that it is caused by streptococci, and for this reason special streptococcic bacterins have been prepared, and these have been used with fair success for prophylactic purposes.

Whatever the specific microorganism, it is present in the blood, the desquamating scales, the discharges from the throat and nose, and possibly other discharges. However, in recent years it has become the general opinion that the importance of the desquamating skin as a means of conveying the infectious organism has been greatly overrated, while more and more importance is being ascribed to the infective character of the nasal and aural discharges. It is for this reason that physicians now insist strongly upon disinfection of the nose and throat as an essential part of the treatment, in the expectation of thus reducing the probability of the transmission of the disease; and not merely as heretofore, because of the relief which the patient experiences from this treatment.

In this connection, we may call the attention of our readers to a brief abstract appearing in another portion of this issue, telling of the method of treating scarlet-fever being employed in the French army, where the disease is said to be epidemic; this treatment depending for its efficacy largely upon the attention paid to the upper air-passages and the skin. Chantemesse, who makes this report, uses, as a regular routine, applications of 10-percent carbolized

oil for the throat and nose. (See "What Others are Doing" for further details.)

Another French observer, Dr. Felix Ramond, noticing the very favorable effects produced by sodium salicylate in scarlatinal rheumatism (which occurred in 29 percent of his cases) was led to try the salicylate in uncomplicated scarlatina. He declares that, under this treatment, temperature and pulse fall, diuresis occurs, his patients feel better, and the effect on complications is just as evident. Dosage, the same as for rheumatism.

Kerley, in his excellent "Practice of Pediatrics," advises irrigation of the throat with hot salt solution, at a temperature of 120 degrees. "Those who have thus treated the fetid, sloughing throat of scarlet-fever," he says, "need no argument as to its possible advantages."

These irrigations are made from a fountain-syringe suspended about three feet above the child's body. The largest-size hard-rubber rectal tip is employed to bring the current into contact with the throat, the flow being interrupted every few seconds, but it should be forcible enough to act as a cleansing wash, while the volume of the fluid is so small that no inspiration of water can occur. Although a little difficulty may be experienced at first in making these irrigations—which are to be applied with the child resting on its right side, without a pillow—the relief is so great that usually no trouble will be experienced after the first irrigation has been administered, and appreciated for the relief afforded.

Doctor Candler, in his splendid "Everyday Diseases of Children," advises the use of an alkaline antiseptic solution for cleansing the mouth, throat, and nares. One of the well-known menthol-compound tablets, dissolved in 12 ounces of hot water, provides an excellent solution for this purpose.

The method of treating scarlet-fever originally proposed by Milne has been widely adopted, especially in England and now also, as we learn, in France. It is extremely simple, and consists, in the main, in anointing the whole body with undiluted eucalyptus-oil. It is asserted that these inunctions not only serve to prevent the scattering of the scales and add distinctly to the comfort of the patient, but that they also, either through skin absorption or inhalation of the volatile eucalyptus-oil, exert a decidedly modifying action on the course of the disease.

Turn to almost any of the standard textbooks on pediatrics, and you will find this or some similar statement: There is no specific medical treatment for scarlet-fever. In

other words, the average pediatrician suggests almost no medication whatever. Usually, of course, the author will recommend the cleaning out of the bowels with some simple laxative—but that will be about all by way of therapy.

Readers of CLINICAL MEDICINE know that we believe in more energetic measures. There are at our command remedies of distinct value for combating scarlet-fever—remedies that many physicians have come to look upon as indispensable. And first on this list we are bound to name calcium sulphide; for, as Candler cogently declares, "This sulphur compound is the greatest of all systemic antiseptics." Calcium sulphide should be prescribed in doses of 1-6 to 1-3 grain, repeated every hour until the patient is thoroughly saturated with it—exhales the sulphureted odor. In association with it, nuclein should be given, in order to increase vital resistance. If there is much fever, it may be combated with small, frequently repeated doses of aconitine, the cardiac effects of which may be guarded against by the administration of digitalin with every second or third dose.

The patient's bowels, of course, should be cleaned out thoroughly at the very beginning of the treatment, preferably with calomel, now on the market in delightfully tasting aromatic tablets, which the child will eat avidly. It may be followed with castor-oil or one of the pleasant effervescing preparations of magnesium sulphate.

If the temperature tends to run high, bathing or giving an occasional cold-pack may be resorted to without fear. Kerley is correct when he says: "The mere existence of a rash is no contraindication to the application of moderate cold to the skin. The pack may be used in scarlet-fever, just as in pneumonia or typhoid-fever. The fear that the disease may strike in and kill the patient is one of the many inexplicable ideas of the laity with no foundation in fact." In giving the pack or bath, care must be taken, of course, that it is not too cold at the start. Begin with a temperature of about 95° F., then gradually reduce—though rarely, if ever, to below 80 degrees. If these baths are followed by inunctions of cold-cream or liquid petrolatum, or rubbing with eucalyptus-oil, either of full strength or mixed with one of the fats, it will add greatly to the patient's comfort.

Particularly on account of the tendency to renal complications (nephritis), which so often occur after the acute symptoms of the disease are past, the diet of the scarlatina-patient is of the utmost importance. Formerly, milk

alone was prescribed; but, it must be remembered that this is a highly concentrated protein food and proteins often putrify, that it has a tendency to produce constipation, especially in children, and that the patient is likely to get very tired of it. Just as safe—in fact, probably safer—and from almost every point more satisfactory, are the simple cereals, given mainly in the form of gruels; various combinations of these being permissible. Fruit-juices are usually relished, and may be given freely.

Whatever the diet, the doctor should keep in mind the importance of that old adage of ours—"Clean out, clean up, and keep clean." The bowels should be moved every day, either by means of laxative salines or enemas, or both; while the sulphocarbolates or other intestinal antiseptics need to be given practically throughout the entire course of the disease. Recently many physicians have employed Bulgarian-bacillus cultures, to keep the bowel in a healthy condition. These cultures are of special value after the febrile stage of the disease is past, and during the convalescent—and nephritic—period.

This describes, in briefest outline, the rational modern method of treating scarlet-fever. No attempt has been made to cover the treatment of complications or to give every detail for meeting every complication that may arise. However, we would particularly emphasize the following points:

1. Scarlet-fever is transmitted mainly by the discharges from the nose and throat; also, the throat is probably the breeding ground for multitudes of the causative microorganisms, and, therefore, it is desirable to treat this portion of the body energetically in every case of scarlet-fever. Antiseptic gargles, sprays, and irrigations may be employed, according to the age of the child, the severity of the disease, and the ease of application. In older patients, sprays of carbolized oil are suggested; in younger ones, irrigation in the manner advised.

2. Skin inunctions with eucalyptus-oil are undoubtedly of great value. Eucalyptus is a powerful and, yet, an almost harmless antiseptic.

3. For its direct effect upon the cause of the disease, calcium sulphide is the best remedy at our disposal. It should be given in every case of scarlet-fever, from the very beginning, and continued throughout the febrile stage. It should be supplemented by nuclein, in generous dosage. Aconitine, supplemented by baths or cold compresses, is our best remedy for fever.

4. As in all acute infectious diseases, careful attention must be paid to the alimentary canal, which should be cleaned out and kept clean with the aid of indicated drugs, while nutrition is maintained by means of indicated foods.

If you will keep these points in mind, you will not go far wrong.

The Illinois State Hospital for the Insane has substituted clay modeling for golf as a cure for insanity. Let's see; this removes the last excuse for perpetuating golf, doesn't it?—*Cleveland Plain Dealer*

OUR PROVISION FOR OLD AGE

It often becomes a serious question, as we survey the course of human events, to decide whether, on the whole, the race is evolving or devoluting. Most certainly, we are adding to our store of facts and developing the mechanic arts; our captains of industry are piling up huger fortunes; our microscopes look more deeply into the minuter forms of matter; our prisons, asylums, hospitals, almshouses, and other public institutions increase in magnitude and completeness.

Is this all there is to it?

The litany said: "From the fury of the Northmen, good Lord, deliver us!" Instead of a few long ships, with a few score of skin-clad spear- and swordsmen, we see millions of fierce Northmen, equipped with the last possibility of death-dealing paraphernalia, rushing upon the south.

Has there been any essential change in the nature of men? in their mental development? in their moral standards? Are we better, wiser, stronger, braver, brainier, kinder than our faraway ancestors?

We might ask to have pointed out to us the modern equivalents of Plato and Aristotle, Jesus and Buddha, Euclid and Archimedes, Phidias and Praxiteles, Homer and Aeschylus. But let us come nearer home and ask about an ordinary, everyday, everybody matter: How about our treatment of the old?

More than one savage tribe, when they concluded that the days of usefulness for any member had passed, served the unfortunate—or otherwise—member up as the *piece de resistance* of a barbecue. The senile might congratulate himself on passing over in a scene of hilarity—à la Clarence in his malmsley butt—in which he himself played the star part. Or, he might find a grim humor in the thought that even in death he would prove a tough morsel. But, in any event, looking at the vicissitudes of savage

life, with its constant struggle for food, for existence, this ending was as merciful as is the bottle of chloroform inadvertently left within reach of the hopeless, inoperable cancer-patient.

Not a week passes but that we read in the dailies about some old man, bereft of hope, unable to find supportable work, dependent upon kin, having committed suicide. What has life to offer such a one to render it attractive? Friends of one's youth gone, children ungrateful, employment unattainable, the failing senses destroying the pleasures open to younger men; all the while the infirmities of age increasing, while the means of relieving them, and providing such alleviation as might be possible are wanting—what wonder that self-destruction is growing in frequency among aged men?

Add to this the consequences of mistaken confidence; the unconscionable scoundrel in whom one trusted, who would rather make one dollar by swindling than two by playing the game straight, robs his victim, not alone of the savings of a lifetime, but also of the respect of his fellow men. To such a man, faith in one's fellows merely is evidence of cerebral softening, and the highest effort of mentality would be an address on the science of getting rid of a trimmed sucker.

Well, suppose the old man has not the nerve to blot out his life—the other week the papers told of one instance, that of a man who had drawn a salary of one hundred dollars a week which he had been handing over to his family. At the age of 74, he was let out, penniless; his wife and children sent him to a little country town and allowed him one dollar a week upon which to live. Naked and starving, this old decrepit man ran out into the streets of Chicago and made known to the world his plight. Better dead?

In the last analysis, a man's life is his own. If the present offers no inducement for living and the future has no betterment in store, why live?

I have before me an appeal from C. A. Burrows, of Lancaster, Pennsylvania. Aged 77 years, he is urging a constitutional amendment permitting the United States government to establish old-age pensions; also, to establish a "twilight home for old age." The former is a most desirable scheme indeed; the latter is but a very small drop in the bucket, and the advocacy of such little measures is liable to divert interest from the main point, the pension-matter. Burrows tells us that only the United States, Russia, Turkey, and Japan, of the great nations, have no such pensions for old age.

A great proposition and one that should receive the active advocacy of everybody, especially of those who begin to realize the need of such a provision for the aged. Mr. Burrows should be heartily supported in his movement.

"He is young who sees more ahead of him than behind him." That's why we never expect to grow old.

SOME CONSIDERATIONS ON BLOOD PRESSURE

The mere diagnosis of increase or relaxation of vascular pressure is not enough. We must know how and why the pressure is altered.

An increase of the pressure may be caused by an increase in the force of the heart or in its rate, by which more blood is propelled into the aorta. Or it may be owing to contraction of the capillaries and arterioles, by which the escape of blood into the veins is hindered. There is a clinical significance in this distinction.

So, also, a lowering of pressure may result from a slower heart action, a weaker or less complete heart action, each beat sending less blood into the aorta; or there may be a relaxation of the arterioles, through which the blood is permitted to escape into the veins more readily. Low tension may also be due to a deficient supply of blood to the left heart, from contraction or other obstruction of the pulmonary vessels, or from stagnation of the blood in the great veins, as in shock.

A short, quick heart-beat has less influence than a prolonged and complete one, as in the former case the heart has not time to be filled with blood and less is propelled proportionately to the force exerted. Complete diastolic relaxation allows a full supply of blood to enter the heart, whereas an incomplete relaxation prevents the entrance of blood. Increasing the tonicity of the cardiac muscle, therefore, is likely to lower the blood pressure, by unduly prolonging the systole. It is probably because of this fact that good observers occasionally have seen better effects from vascular relaxants, such as sparteine, than from constrictors like digitalis, when the circulation needed help.

A rise in blood-pressure slows the pulse by increasing the tonicity of the pneumogastric center in the medulla, while a fall in pressure quickens the pulse by relaxing the tone. Hence, again we see where the influence of strychnine may be exerted, by raising the tonicity of the center and thus slowing and strengthening the pulse.

A rise in blood pressure is accompanied by slowing of the pulse if the rise results from contraction of the arterioles; but, if the pressure rises and the pulse quickens, the change is in consequence of an increase in heart power. When pressure and pulse rate fall together, the cause likewise is to be found in the heart; but if the arterioles contract, the vagus roots are stimulated, the pulse slows, with the rise in pressure. The slowing of the pulse, after the use of drugs that contract the arterioles, is far more rapid than the fall of pressure. If the vagi are paralyzed, we may have an increase in blood pressure and in the pulse rate, from contraction of the arterioles.

We must not fall into the error of considering the circulation as a whole or as uniform. The vessels of the abdominal viscera are quickly influenced by the vasomotor center, contracting powerfully when this center is stimulated; but the vessels of the muscles are scarcely influenced at all; in fact, they are, in reality, dilated, inasmuch as they receive more blood when other areas of the circulation are contracted. Nevertheless, these muscular vessels are influenced by digitalin, contracting strongly, thereby helping to maintain the pressure.

Courage, dear soul,
The hosts of heaven, the whole
Battalion of the seraphim await
To see your battle against wrong and hate.
Not all the angels in phalanx
Could for God's will prevail,
If in our struggling, mortal ranks
These men of earth in love's great cause should fail.
—Edwin Markham in *The Nautilus*

RELIEF FOR THE CORPULENT

Most men and all women who are over the average weight for age and height want to reduce. However, the means of accomplishing this are not so simple as may at first appear. We have practically no foods capable of sustaining life in full health that can not be transmuted into fatty matter.

Fats, sugars, carbohydrates, and proteids alike may serve to increase adiposity. It would seem, therefore, that we are compelled to fall back upon the rather obvious principle of limitation of food—for, if we take in less than we excrete, there necessarily must occur a diminution of one's weight. But—

A jockey had, by dint of incessant self-denial, reduced his weight to the prescribed degree, but just a few hours before the race, partook of an ounce of hot tea, when, presto,

at the weighing he was found to have gained nearly a whole pound. Don't ask me how!

A lady who, in the pursuit of "sveltiness," had reduced her intake until she ceased to increase weight, found that she was consuming only thirteen ounces of food in each twenty-four hours; but she was losing strength faster than weight. This thirteen ounces of food included liquids as well as solids.

In the case of men, the problem seems easier. This writer possesses an equator that appears indefinitely expandable; however, abstinence from undue amounts of liquids, together with a vigorous daily application of the bucksaw to a lot of tough old oak wood, serves the purpose admirably; and it dissipates all unpleasant side ailments as well.

Few women seem disposed to look upon the bucksaw with the affection its virtues warrant. They prefer to take medicines.

Try this:

Phytolacca, to loosen the superfluous material.

Lobelia, to stimulate the excretories to carry it out of the body.

Hydrastis, to close up the void and prevent pendulous skin and wrinkling.

Each to be dosed to the needs and its effect. Continued for long periods, at least several months.

Is this treatment "specific?" Of course not—it is merely suggestive. But that anti-obesity treatment may be effective I know, and there are other things worth trying. Perhaps you will suggest some that have served you well.

THE GERMICIDAL ACTION OF DISINFECTANTS UPON THE TUBERCLE BACILLI

In our daily work, in office and outside practice, we are constantly taking advantage of facts which we consider to be self-evident, but which, after all, required much laborious investigation before they could be determined. We employ, for instance, a 0.5-percent solution of phenol (carbolic acid) or a 0.001-percent solution of mercury bichloride for disinfecting objects that have been exposed to bacterial contamination (please note, only after all visible dirt has been removed by washing and scrubbing) and feel safe that they have been freed from any possible contamination. We paint the skin with iodine prior to making an incision, being satisfied that with an otherwise unobjection-

able technic we need fear no danger from that source of possible infection.

It hardly ever occurs to us, however, to inquire how it is that we can know the actual germicidal action of those antiseptic substances employed in the respective degrees of concentration, and we reckon little of the time, labor, and patience expended by the research-workers in their endeavors to furnish us with safe methods of procedure.

This seems to be the unavoidable condition brought about by the acquisition of knowledge (and its application to the practice of medicine) that cannot be obtained in the former manner of clinical and bedside study.

The research-worker in his laboratory, making use of the data ascertained by physiology, chemistry, biology, and all the auxiliary sciences, devotes weeks, and months, and years to the study of some particularly difficult or fascinating problem. The clinician calmly appropriates this student's results; and both are apt to think, each of the other, a little slightly—the laboratory-worker with a pitying smile at the necessarily limited knowledge of the clinician, the latter, with a half-impatient resentment of the didactic assurance of his colleague of the test tube and animal experiment.

Yet, both are necessary and important members of the medical profession. Only in the more vivid, more immediate and more tangible experiences of the clinician we are apt to undervalue the patient labor of the other, albeit, realizing gratefully that without him we should be sadly at loss in many an emergency.

In a comparatively recent number of *The Journal of Infectious Diseases*, Dr. Lydia M. DeWitt and Miss Hope Sherman reported some very difficult and tedious experiments, in which they attempted to determine the germicidal action of certain disinfectants upon tubercle bacilli. While the search for disinfectants has been successful with regard to the great majority of pathogenic micro-organisms, in the case of the tubercle bacillus it has always been attended with an unusual degree of difficulty; owing, according to some authors, to the fatty-waxy capsule with which this bacillus has been provided as a means of defense in its century-old struggle with the animal and human organisms.

Consequently it may be understood why, in all the great mass of literature on general disinfection, there is comparatively little dealing at all directly with the power of chemicals to kill the tubercle bacillus, and

that this has generally been accepted, although it is nonsporogenous, as being among the most resistant of pathogenic organisms.

The researches of DeWitt and Sherman thus acquire an interest which is the greater, as they bear upon those of Finkler, Countess v. Linden, Strauss, and some others with reference to the chemotherapy of tuberculosis.

The elaboration of a suitable method for these experiments has taxed the ingenuity of many research-workers, since certain disadvantages and inadequacies appear to inhere in all of them.

After many preliminary tests, DeWitt and Sherman employed a direct method of exposing clumps of bacterial cultures to the action of the disinfectants and observing their power of destroying the viability of the tubercle bacilli and controlled the results of these experiments with animal-cultures, making use of the so-called garnet-method suggested a number of years ago by Kronig and Gaul.

In thus exposing clumps of the bacteria to the action of the disinfectants, the time limits as a rule, were one hour, six hours, and twenty-four hours. At the end of the specified time, the clumps were placed either in a neutralizing fluid or in water, in order to interrupt the action of the disinfectants. In all cases, the clumps were then washed through four solutions, the last two being 0.9-percent salt solution. Bits of the clumps were then seeded on slants of glycerin-agar, in order to determine whether they were still viable.

For the animal experiments by the garnet-method, crude Bohemian garnets of equal size were prepared by a rather complicated process, and sterilized. They were then soaked in a thin filtered suspension of human tubercle bacilli and dried over fused calcium chloride. About 30 infected garnets were then placed on small platinum baskets and immersed in the various disinfectant dilutions. At the end of the desired times, the baskets were removed to dishes containing large quantities of distilled water, then either to solution of ammonium sulphide or to another dish of distilled water, and then washed in two salt changes of solutions. Then 10 of the treated and washed garnets were dropped into test tubes, each of which contained 2 Cc. of sterile salt solution, and agitated in a shaking-machine for five minutes.

The fluid, containing the organisms which had been shaken from the garnets was then injected subcutaneously into guinea-pigs.

For controls, clumps and garnets were treated in the same way, using 0.9-percent salt solution in place of the disinfectants.

In not a single instance, did a control-animal fail to develop local and general tuberculosis, nor did a control tube fail to show luxuriant growth, thus proving that the cultures employed were virulent. And it may safely be affirmed that, where the animals did not develop tuberculosis or the culture tubes did not show growths, this was because of the bactericidal action of the disinfectant with which the clumps, or the garnets, as the case might be, had been treated.

Altogether, the investigators named, sacrificed approximately 1,000 guinea-pigs and used many more tube cultures to ascertain the bactericidal value of the disinfectants under examination.

We have described the method at some detail, because we believe it to be of interest for the practitioner to know how much patient study and research may be necessary to obtain results, the summary of which not infrequently may be condensed into a few lines. And these experiments, as we shall show, are not limited in their application to tuberculosis alone.

Under the influence of these and other laborious researches, it may be a little disconcerting and, possibly, discouraging to recall that the value of disinfectants, of fumigation, and of other established methods for preventing infection by various pathogenic systemic organisms has recently been questioned by noted sanitarians.

Of course, we long since have passed the stage when we believed that, for instance, a 5-percent solution of carbolic acid, or even tincture of iodine, applied haphazard to a dirty wound, would counteract infection and in consequence, feel safe without exercising strict cleanliness. But we have been feeling rather comforted after fumigating a room, from which a scarlet-fever patient had been discharged, with sulphur or formaldehyde, and have felt that we had done the needful to make it safely habitable again—perhaps on account of the unholy stench which our fumigation had produced. We are also quite careful to destroy fomites, clothing, and other articles contaminated by discharges of patients afflicted with infectious diseases.

It does seem rather radical, therefore, when we read that Dr. Alvah H. Doty (*Med. Rec.*, Oct. 17, 1914), attempts to disprove the fomites-theory and also the idea that the

air swarms with pathogenic bacteria. Even in the sick-room, he asserts, these germs are much less in number than has commonly been supposed, while being removed from their proper media, they are disabled and of little danger.

Now, while we are quite willing to accept Doctor Doty's high estimation of the disinfecting value of fresh air, sunlight, and lots of soap and water vigorously applied, and while we agree with him in his contention that disinfectants are of little value unless filth and dirt are first removed, we shall feel safer if we continue to burn the clothes into which consumptives or diphtheria patients have expectorated, and have destroyed other fomites which contain the discharges and other contaminating material from patients ill with infectious diseases.

Yet, in spite of all, Doctor Doty's article is well worth pondering over, although it cannot lessen our gratitude to investigators like Doctor DeWitt and her associate for her patient and thorough labors.

"Enthusiasm is that thing that makes a man boil over for his business, for his family or anything he has an interest in, for anything his heart is in. Enthusiasm is one of the greatest things a man can have."

NEW DRUGS VERSUS OLD DRUGS

Dr. W. J. Robinson has the rare faculty of crowding a whole sermon into a single paragraph. Witness his editorial comment, in the last number of *The Critic and Guide*, on that tiresomely reiterated advice to doctors—to beware of the new drugs and stick to the Pharmacopeia. Listen to Robinson:

"Some staid, respectable doctors tell us not to be constantly running after new drugs. It is good advice. It is good advice provided we bear in mind that a drug is not necessarily good because it is old; nor is a drug necessarily bad because it is new. If all the old drugs were good, so many of them would not be kicked out with each revision of the Pharmacopeia. Just look over your drugs in the Pharmacopeias of fifty, forty, thirty or twenty years ago and see how many of them have been dismissed from the last Pharmacopeia. It is not good to be over-sanguine in using new drugs that have not been given a fairly good trial by competent clinicians; but it is just as bad, if not worse, to be a hidebound conservative and stick to old drugs that have nothing in their favor but reputation of age, but which have been proven by numerous pharmacologic and

clinical trials to be worthless. Only the man with an open, unbiased mind can be a successful physician. But what a rare treasure an open, unbiased mind is!"

We will go a step further than Doctor Robinson. In our opinion, it is the *duty* of every competent physician—and every doctor should be competent if he is to practice medicine—to give a faithful, conscientious trial to every remedy that shows promise of substantial merit; *always keeping in mind the best interests of his patients*. Pope's celebrated epigram,

Be not the first by whom the new are tried,

Nor yet the last to lay the old aside,
contains much worldly wisdom. However, someone must be first. If not you—then who? If nobody is to try the new drugs, or if only the scholastically elect, we shall soon be at a standstill. Progress involves mental alertness on the part of those who "follow" as well as those who lead. And in this ages-old advice to shun the new, I am reminded of the damsel of our childhood rhymes who was admonished by her cautious mother to

"Hang your clothes on a hickory-limb,
But don't go near the water."

Commenting on the statement of a New York doctor, that people can avoid taking the grip by keeping their mouths shut, The Houston Post cruelly remarks that they can also avoid making fools of themselves by doing the same thing.

"INTELLECTUAL CONFLUENCE" — OR, EACH FOR ALL

In his scholarly presidential address before the Tristate Medical Association of the Carolinas and Virginia, Dr. Edward C. Register made use of the newly coined expression, "*intellectual confluence*," and this term is so peculiarly suggestive that it deserves to be perpetuated. By this phrase, Doctor Register defines that state of mind "by which the ideas, discoveries, and experiences of the isolated individual seeker after truth find their way into the thought and usage of our whole profession." As the Doctor points out, "into the mind of a physician who rides on his errand of mercy in his isolated and sometimes lonely countryside, an idea falls, an experience comes—and there possibly a valuable discovery is made."

Then Doctor Register goes on to ask how such an idea or discovery may be placed at the disposal of our medical fraternity. As he clearly points out, there is not the slightest doubt that thousands of discoveries that might prove of vital interest to the world

have failed to germinate, because the soil was not provided in which these thought-seeds might develop.

"When we think," he continues, "by what a narrow margin of seeming accident most of our boasted medical science has been stumbled upon, our minds are filled with a sense of urgency to do everything to save, perpetuate, and safeguard as a golden treasure all those sometimes seemingly small contributions of experiment and experience that go to make the glory of our science." It is only when we shall be able to provide some means of *intellectual confluence*—to use the term coined by Doctor Register—that we can collect in common centers, for reference and utilization, the many happy thoughts that might be contributed by the thousands of individuals making up our medical body.

There are two principal methods by which this greatly to be desired end can be brought about to which Doctor Register refers—the first being through our medical societies; the second, through our medical journals. Both of these means are valuable, and both should be utilized to the fullest by every practitioner.

One thing that we have repeatedly urged upon the readers of CLINICAL MEDICINE is the value of this interchange of opinion through the columns of this journal. We want to make it the broad highway of intellectual confluence for the thousands of our readers who have no other adequate means of expression. We fully believe that there is not a physician—an earnest, thoughtful physician, we mean—who does not from time to time learn of something that would be simply invaluable to other physicians. Then, why does he not impart this knowledge? It is his duty to do so, and the means is within his reach.

We are glad that Doctor Register, in his splendid address, brought this matter again so powerfully to the attention of the medical profession. His paper should be read by every physician and its advice taken to heart. It is not the "big men" in the profession alone who can teach us; there is many a "cross-roads" country doctor, practicing in some out-of-the-way country district, far from the medical centers, who could give vastly more of practical advice to the rank and file of us than can many of our learned professors and bookwise "authorities."

CLINICAL MEDICINE aims, above everything else, to be helpful to the man in the field. If it has succeeded in that aim, it is mainly because its alert readers have wisely made of its columns a means of confluence,

a thesaurus, or treasure-trove, of the experience of the great number of busy men who have found in its open pages an opportunity within for telling their pregnant stories.

The men who are busy miss half of the woe that's hunting for victims to slay; they get all the cream in this valley below while idlers subsist on the whey; while fortune kicks others she'll give you a kiss, you'll win more applause and you'll know more of bliss, if you always keep pegging away.—*Wall Mason*

OUR FRONTISPIECE

The picture shown in our frontispiece is a reproduction of a painting by Mlle. Michaud, which was hung in the Paris salon two years ago, we believe, under the name "La Petite Malade"; that is, "The Little Patient." So far as we know, it has never heretofore been reproduced in this country. This copy was procured by us direct from our correspondent in Paris.

We hope that this picture will have a special appeal to many doctors and doctors' wives. We know nothing about Mlle. Michaud, the artist, but we are sure of this: she has really been in the sickroom and can appreciate the task of the doctor and can sympathize with those in sorrow and distress. The picture tells its own story. Look at that anxious mother's face.

If any of our readers desire copies of this picture suitable for framing, we shall be very glad to send them reprints, on good paper, mailed flat, at 10 cents a copy.

LET'S GET ACTION ON THIS

During the last thirty days we have added more than five thousand new subscribers to our list. We want to make these brethren feel at home, and we want to show them how we all can and do strive together for the common good. Also, we want to get them into the habit of working with us. CLINICAL MEDICINE is a favorite with its readers because its columns are thrown open for the free interchange of opinion on all topics of practical interest—particularly as regards the therapy of every-day diseases. We know that thousands of you men out on the firing line can give us "cards and spades" on the handling of many troublesome ailments, little and big. Please consider this the heartiest, friendliest kind of an invitation for *you* to send in *your* contributions. The only conditions we make are that you cut out religious, political, and sectarian controversies, get right down to brass tacks, and write briefly and to the point.

In order to start the ball rolling, I suggest that some of you—many of you—tell us something about your practical experiences with the contagious diseases of childhood—scarlet-fever, measles, whooping-cough, mumps, and the like. These are very common during the spring months. However, if there is some other topic that appeals to you more, go to it. The essential thing is to get action, and get it quickly. The time is short, and we want many of these short, snappy articles.

You, too, are included in the invitation, new subscribers—and "welcome to our city!"

ARMA VIRUMQUE CANO

Dearly as we may love peace, we must sooner or later realize that it is an impossibility without the mutual respect of all parties involved. The idealist may theorize on what human nature ought to be, and, indeed, the more he insists upon his ideals, the nearer we shall approximate thereto; still, in the end, old human nature—the Old Adam—remains the same.

It is, surely, instructive to study the Maxims of Ani, dating from Egypt's fourth dynasty (about a millennium before Eve presented Adam that disastrous apple-pie), and note how many of the wise saws of that ancient philosopher are applicable to the present-day generation. Take as an instance the warning the sage tenders the remote ancestor of Rameses, when Potiphar's wife sends word that her "old man" is away on a journey and that it will be safe to run up for a "cold bottle, a hot bird," *etcetera*. Compare with almost any daily paper of today—and you will agree that men and women are very much the same in every age the world over.

So, when our neighbor arms himself with automatics and maxims, we are compelled to discourage any thoughts he may have of aggression, by doing likewise. To any suggestion that we may disarm his greed by forbearance and nonresistance, we tender the unanswerable reply—China!

Universal armament in Germany forced universal armament in the rest of the continent; and at last in England, after a costly lesson on its neglect. We shall be compelled to follow, sooner or later; and, if the pacifists succeed in persuading us to postpone it, we shall surely pay for this a heavy toll of lives needlessly sacrificed.

The problem is so complicated here that we can not begin its discussion too soon.

How about the southern states with their huge negro population? It is our belief that the effect will prove beneficial. The negro is amenable to discipline, and the restraints of military service should render him submissive to law and disposed to uphold authority. During the Civil War, his attitude to the ruling whites was such as to illustrate his faithfulness and devotion—in fact, there is no finer example of his best qualities than was then afforded.

With the numerous races and peoples comprising our immigrant population, no better method of amalgamating the elements can be presented than this one of military service. The men who prepare for battle, side by side, become comrades for all future time. The pride of race that leads each to contribute his share to the general fund of warlike capabilities induces mutual respect and enhances the military value of all.

What chiefly interests us is, the opportunity offered to the medical profession. Already we have demonstrated the enormous value of modern medicine to the army, and we stand ready to extend this service as the opportunities widen. All previous wars have witnessed greater mortality and disablement from disease than from the weapons of enemies—our profession now has shown that we can prevent this condition and keep the soldier sound in the ranks. We have perfected the art of the surgeon far beyond what it was in preceding wars and stand ready to furnish an almost unlimited number of proficient practitioners for our armed people. We are ready to detect the carriers of army-pestilences and to prevent the occurrence of variola, dysentery, cholera, typhoid fever, typhus, tetanus, and of the many maladies that depend upon defective sanitation. We now know the etiologic relations of the fly, flea, louse, bedbug, tick, and mosquito, and how to render these insects innocuous. We can render impure or suspected waters potable; reduce the components of a ration to their lowest denominator by excluding the innutritious parts; protect the army against those other diseases that reduce its fighting numbers and qualities most seriously.

The greatest task yet to be solved is, the control of that conservative opposition that seeks to prevent the applications of our knowledge, by objections based upon ancient and obsolete beliefs. According to it, we must not relieve woman of the pangs of child-bearing, because it is written that she "must bear her child in anguish and sorrow;" we must permit the innocent and the guilty

alike to suffer from venereal diseases and thus see a material portion of our armies rendered useless—lest, forsooth, the prevention of this group of infections might lead our soldiers to an increased indulgence of the sexual passion, or of its augmentation—if that were possible.

The clouds of superstition pass away but slowly—it has not been so very long since a flight of crows would prevent the giving of battle. Every step of medical progress has been made in the face of opposition such as this; while no inconsiderable portion of our highly cultured citizens still looks upon resort to tangible, comprehensible, remedial science as essentially immoral. We may here risk affronting valued friends by suggesting that the prevention of yellow-fever in the Canal Zone was never accomplished by processions and saintly intercession; yet, the true Christian will only feel the wrong of attempting to saddle his faith with such absurdities, instead of utilizing the reason with which the Creator has endowed us.

Whether we like warlike preparation or not, is scarcely the question; but rather, whether impotent China or organized, disciplined Germany is to be our model. In any event, American medicine is ready for its duties.

"It is probably true that a modified universal military training, so arranged as not to interfere with the education of young men for their future occupations in civil life, would be of advantage to this country, not only from the economic standpoint of physical and industrial efficiency, but psychologically, as a corrective of the lawlessness and ill-discipline which are among the greatest defects of American civilization."—*Boston Medical and Surgical Journal*. Do you agree?

MODERN MEDICINE IN MODERN WAR

It is perhaps too early to begin boasting, but, with the saving precaution of giving three knocks on the arm of our chair, we cannot refrain from calling attention to the freedom of this war from typhoid fever. For the first time in the world's history, the embattled armies have been left free to kill each other. With shot and shell, shrapnel and bomb, deadly lyddite and suffocating chlorine, the contending warriors are at liberty to deal death and destruction upon each other, on sea and on land, under the waters of the briny seas and under the vaulting skies, and in the stygian bowels of Old Mother Earth—everywhere. Heretofore, doing their utmost, the bacilli of the typhic group have laughed the combatant's puny efforts to scorn. Microbes laugh? Why not? Did not Virchow declare

the individual cell possessed of volition? Then why deny it a sense of humor?

However, the immunizing bacterin has completely protected the warring hosts from the attacks of typhoid fever, and in this particular this product of the modern laboratory guards the rear and leaves the soldier free to devote his energies to the enemy in his front. The record of this typhoid-prophylactic vaccine assuredly must have silenced every doubter that still remained to block the path of progress. There is no room for further argument on this score, except as to the methods of fully utilizing the wondrous powers of this agency.

It is to the American doctor that we owe the most complete, the most spectacular triumph of our day. Here, in America, we know and dread typhoid fever; still, the very name of this malignant malady indicates its resemblance to a far more dread visitation—the true ship-, jail-, or army-typhus. A feeble and rather insignificant outshoot, known as Brill's disease, is the only form of typhus recognized in this country, but in Europe it has helped to beat down the resistance of Serbia's heroic mountaineers, and laid that country prostrate.

History is repeated—Rome crumbled before the onslaughts of her northern invaders only after the plague had left her a mere shell. But, while the Teuton hosts were gathering, America conquered their potent ally. Basing the campaign on the transmission of the infection exclusively by the body-louse, our medical Xanthippus eradicated this parasite and put an end to the epidemic. Too late to save Serbia from conquest, we, yet, delivered her from the added burden of typhus.

Now our desolate southern sister "republic," Mexico faces the same enemy, and it would seem to one who places common sense before all else that a similar conquest of typhus there would excuse the temporary occupation and administration of the distracted state that would be necessary for attaining that object.

Another outcome of modern serotherapy seems likely to be established by the great European war, namely, the utilization of tetanus-antitoxin as a prophylactic. Ordinarily we may question whether tetanus is likely enough to warrant the application of this remedy in every instance, when a wound seems capable of affording an avenue for ingress for this infection; but, in military hospitals, it is different. There, the tetanus infection may become universal, and, thus, the prophylactic value of the serum may be fairly established.

The enormous demand for iodine that has sprung up since Major Woodbury directed attention to the value of this agent has caused a hunt for substitutes. Bromine, tried out successfully in the latter years of our Civil War, is finding renewed utilization by German army surgeons. More abundant and cheaper than iodine, it is also more powerful as a germicide, although it demands more care in its use, to avoid undesirable effects.

War is surely hell. But, when the doctor does so much to alleviate war's miseries—while modesty forbids us doctors to claim angelic attributes—we may at least think of ourselves as not wholly satanic.

Be like the happy man who had

A big cucumber vine,
And when a white worm ate it off
Did he sit down and whine?

O, no! he took that hearty worm,
Went to the lake and caught

A monstrous fish that sold for more
Than the vine would have brought.

—Chester Wood in *The Nautilus*

NEW IDEAS ABOUT DIABETES

We particularly urge our readers to turn to the rather long abstract of some recent work on the treatment of diabetes, which will be found in this issue in the What Others Are Doing Department. As we have there pointed out, Dr. Frederick M. Allen, of the Rockefeller Institute, has been doing some very remarkable investigative-work upon this disease—work which has a basis of experiments with animals, but also has been worked out on a clinical scale sufficiently far to warrant fully the enthusiasm that is being lavished upon it.

While Doctor Allen's method of treatment is largely dietetic and does not involve, necessarily, the additional use of drugs, this subject is of such vital importance to the thousands and thousands of persons suffering from this disease that we wish every reader of *CLINICAL MEDICINE* to understand fully the method proposed, so that he can put it to the test in his own practice.

It may be—and undoubtedly is—too much to hope that a victim of diabetes can be cured; nor do we understand that any such assertion is made by Doctor Allen. What he does show, however, is that a very large percentage of these patients can be taught to live comfortably and to prolong their lives despite their affliction, provided they are able to control their dietetic regimen and to maintain a certain firm disciplinary hold

upon this all-important function of life—nutrition.

There is one thing about the Allen treatment which we are sure will appeal strongly to all the oldtime readers of this journal, namely, the insistence upon the importance of the alimentary canal as a factor in the production of its symptoms. The theories advanced by this investigator seem to us quite compatible—in fact, almost synonymous—with our years-old slogan: “Clean out, clean up, and keep clean.” This contribution only strengthens our faith in the importance of watching closely the condition of the alimentary canal, in diabetes as well as in practically every other serious acute or chronic disease.

AN EARLY ADVOCATE OF ANTISEPTICS

Some two centuries ago, Bishop Berkeley published an essay in which he called attention to the medicinal properties of tar-water. At the time of his investigations, the Bishop was a resident of Newport, Rhode Island; consequently, we have here a true American discovery—made in America, with an American product. Moreover, Berkeley was one of the earlier arrivals of that immigrating people who have made so deep an impression upon our national life, the Irish Americans. (No hyphen, please!)

In “Siris,” Berkeley made use of the following expressions, which now appear strangely prophetic:

“The seeds of things,” he wrote, “seem to lie latent in the air, ready to appear and produce their kind whenever they light on a proper matrix . . . the air, every part of which seems replete with seeds of one kind or other. The whole atmosphere seems alive. There is everywhere acid to corrode and seed to engender.”

In another place he says: “As the nerves are instruments of sensation, spasms in the nerves may produce all symptoms.” And again:

“Tar-water is of great use for the nerves, curing twitches in the nervous fibres, cramps also, and numbness in the limbs, removing anxieties and promoting sleep.”

Further on, the philosophic, yet, practical, bishop advises the use of tar-water as a substitute for the indiscriminate resort to alcohol, which he condemns emphatically, and especially voices his warning against intoxicants disguised as medicine. Our presentday protesters evince no clearer comprehension of the true inwardness of alcoholic nostrums,

like Peruna, than Berkeley did, the philosophic cleric, when writing, around 1715, in the log-house village of Newport.

Yet, it was not by accident that this profound thinker and prophetic seer had selected Rhode Island for his residence; for the historian, Ridpath, informs us that more than half a century before that date—in the year 1656—Dorothy Waugh, a Rhode Island Quakeress, was drummed out of New Amsterdam, tied to the tail of an ox cart, because she persisted, after due official warning to desist, in preaching in the streets of the town.

But, back to our story: Bishop Berkeley recommended tar-water for persons of delicate sensibilities, for those affected by low spirits, for splenics, for persons of sedentary habits. Incidentally he instances how he personally obtained relief from “nervous colic,” which had rendered life a burden.

Thus, in this book of long ago, we find embodied some of our presentday beliefs—the modern beliefs—see clearly foreshadowed discoveries and developments of modern medical science by full two centuries. The bishop recognizes the ever present micro-organism; he also devines that dependence of disease in general upon the nervous system as nowadays insisted upon by the neurologist. He has acquired an effective antiseptic for use in gastrointestinal derangements and has found that this may give relief from such symptoms as mental depression, general malaise, and the like, which we now attribute to autotoxemia of gastrointestinal origin.

The modern belief that affections of the nervous system have their beginning in the feeding of the nerve-cells with feces-contaminated blood dates from Sir Lauder Brunton’s teaching; yet, Berkeley directed attention to this thought.

It seems curious that this very practical observation should come from the man who, in his philosophical moods, contended that “matter has no independent existence, but is an idea in the supreme mind, which is realized in various forms by the human mind.”

Moreover, at that early day, Bishop Berkeley predicted the coming greatness of America; and, in his poem entitled, “On the Prospect of Planting Arts and Learning in America,” there occurs the fine stanza that has ornamented so many patriotic outbursts of oratory:

Westward the course of empire takes its way;
The first four acts already past,
A fifth shall close the drama with the day;
Time’s noblest offspring is the last.

Leading Articles

The American Clean-Up of Serbia

By the American Red Cross Sanitary Commission

By G. A. LURIE, M. D., Chicago, Illinois

EDITORIAL NOTE.—*Doctor Lurie is a Chicago physician who served with the American Red Cross Commission in Serbia during its campaign against typhus fever, cholera, smallpox, and the other infectious diseases which swept through that country. His story is a true record of the heroism of American doctors, nurses, and sanitary experts. No reader of "Clinical Medicine" should fail to go through this carefully.*

UPON the suggestion of the editor of CLINICAL MEDICINE, I will attempt to sketch briefly some of my experiences during the five months I was with the American Red Cross Sanitary Commission (Rockefeller Commission) in Serbia; to which I (the only physician from Chicago) became attached in the first week of June, 1915. I continued with the Commission until the middle of October, when, our task being practically finished and that suffering country cleaned up, in a sanitary sense, and the Commission largely disbanded, I proceeded to Paris, there to join, temporarily, the American Ambulance Hospital.

The typhus epidemic in Serbia was spread by the refugees coming from the north with the first invasion of the Austrian army, together with the prisoners, thus increasing the crowded conditions and making them ideal for typhus. Arriving at headquarters, my first assignment was to Tetova, with a Mr. Standifer as my associate; the latter for seven years a sanitary inspector in the Canal Zone. There our duty was to inspect and disinfect every house, barn, and carriage within a radius of seven miles, and also to inspect the hospitals, barracks, school houses and other public buildings in surrounding villages for smallpox, which was prevalent at that time. Of course we each had an interpreter. To tell the truth, the houses were filthy beyond description and swarmed with vermin and contagion.

Vaccinating Against Smallpox, Cholera, and Typhoid

I was also tasked with vaccinating against smallpox every individual within our district, including soldiers, schoolchildren, mothers, and babies, besides all of the town and

county officials. The soldiers' barracks were the worst of all in point of filth, apparently not having been cleaned since the beginning of the second Balkan war.

After about two weeks there, I was sent to take charge of the vaccination ward in the second reserve military hospital at Uskub; and here we—another physician and I—broke all records for rapid-fire vaccination. We had to vaccinate—using Castellani tetra-vaccine (cholera, typhoid, paratyphoid A and B)—the soldiers quartered here prior to their leaving for the front; and we two thought nothing of disposing of 1200 men in the space of three hours.

The men's arms were washed, in readiness for the operation, by an Austrian prisoner, in private life a professor of philosophy. Another assistant for this work was a little Serbian lad, aged 14, who had been living in Austria. He ran away from home, got caught between the fighting lines, and was taken prisoner by the Serbians.

Bathing and Disinfection

Next I was assigned to the bathing car. This is a unique and effective disease-preventive. We "cooked" about 300 men a day. The soldiers were told to strip in one car, then they were herded, 15 at a time, into the bath-car and the key was turned on them. For fifteen minutes they were soaked in live steam of rather high temperature. Then the men were ushered into another car, where under supervision they were forced (force was necessary!) to wash themselves well with hot water and soap, in preparation for a cold shower-bath.

A freight car which had previously been used as a refrigerator was used to steam the clothes, thus making an autoclave. The



The American Red Cross Sanitary Commission in camp at Velis, Serbia.

steam was generated in the next car, which contained a boiler. The clothes were steamed for ten minutes and then sprayed with a disinfectant composed of a creolin preparation diluted with H_2O . Before dressing, the men were required to rub themselves down with kerosene and saturate their hair. After this the interpreter delivered a lecture on the sterling virtues of taking an occasional bath.

Then I was assigned to Doctor Castellani's clinic at Skoplje, where I stayed two months. This Italian scientist, who is one of the world's best tropical-disease experts, was in his glory. Among other things, he discovered the microbe of sleeping-sickness. (At times we strongly suspected that this microbe was at work in Serbia, although we could never actually find it.) It is surprising how much tropical disease we found. We have had epidemic after epidemic of malaria, and with it a scarcity of quinine. One hospital in Gengelia resembled an insane asylum, all the patients suffering from malaria, shaking, shivering, and going through various acrobatic maneuvers, craving for just one bit of quinine. Tuberculosis is also very prevalent.

A Fight Against Typhoid Fever

Next I was detailed to go into camp at Prishtina, to investigate the typhoid epidemic at Novovaros and surrounding villages. Here I found sanitary conditions almost as bad as they well could be, especially in the prisoners' quarters, which were condemned. In Prishtina, four stables were disinfected and white-washed, the ground floor leveled and a building erected for lavatory, bath and laundry purposes. A room was made in each one for 300 prisoners. Here also barracks, schools and homes, as well as hospitals, were disin-

fected. In the latter the beds were cleaned, the old straw in the mattresses burned and replaced with fresh straw, and the bed clothes cleaned in an autoclave.

As a matter of fact, sanitation is practically unknown in Serbia; and so it is that, for instance, vessels containing milk are habitually left uncovered, thus allowing free access to flies and other objectionable things, and paving the way for epidemics.

As a rule the people were extremely hospitable, and I found them anxious to assist in stamping out an epidemic. However, in one place where typhoid had been reported epidemic (any rise of temperature would be called typhoid), although it turned out to be diphtheria, I had to stand, virtually, over the people with a club, to induce the families to clean out their wells and homes and open their windows, as they thought they would catch cold; also to build drains for the numerous pools of stagnant water, which had to be petrolled. Then the prefect, who is the mayor of the village, was instructed as to the value of disease-prevention, hygiene and sanitation, and was given several practical lessons on putting this theory into practice, by taking him to one of the homes.

Sanitary Precautions Unknown in Serbia

The Serbians knew nothing of the necessity of careful garbage and sewage disposal. All the streams were polluted and had to be cleaned out. Flies are considered almost as pets, well worth having about the house. A Serbian family often sleep in the same room with pigs. This is not considered conducive to good health in America.

Most Serbian houses consist of one room with a plain wood floor, where the cattle

sleep, the people thinking more of their cattle than of themselves. At one end of the house there is a small vestibule with a clay floor, in which there is a fire. As there is no chimney, the smoke goes out through the door, the roof being darkened by the sparks and smoke. Ten or a dozen—sometimes as many as twenty-five persons—sleep in this clay-covered vestibule, lying on a dirty homespun blanket near the fire.

After the first of October the windows are kept tightly closed all night, for the Serbians



Dr. T. W. Jackson, Chief Sanitary Inspector.

fear that they will catch cold if they inhale one breath of fresh air after dark. In the mountainous districts clocks are unknown, time being told by the first evening star. In spite of these unhygienic conditions the people are strong, and display wonderful endurance. They go barefooted in zero weather, apparently without minding it.

Today there is no typhus in Serbia. However, the epidemic will probably return with the cold weather, but this time it will be kept under control. Nearly everyone in Serbia has had typhus, so most of them are now immune. I found records in the villages where I worked showing that whole families of 15 or 20 persons had been swept away by this disease, not being attended by a physician. In one house near Prishtina there lived 40 persons, and of these 19 died of typhus. In Bardovetz there were 1400 Austrian prisoners. These were confined in stables, and more than 1000 died. Men fell and died like flies, some of them dropping by the wayside going to their meals.

Eventually every well and every other source of water supply in Serbia was examined by the doctors and inspectors of the American Sanitary Commission, and those found polluted were thoroughly cleaned. All contaminated wells were placarded, the people being forbidden to use them until the condition was corrected. Also, every stagnant pool was petrolled, to prevent the breeding of mosquitoes.

The People and Their Country

The war has left the inhabitants in a state of squalor and want. Thus, horses and even saddles are a rarity, and, in going from one village to another, I generally had to foot it, although sometimes I had a mule for a mount, with a piece of hemp for reins. Once I had to ride that way many miles to headquarters for some diphtheria antitoxin. On another occasion, with a medical missionary from China as a companion, I rode for thirty-two hours in a springless wagon, called a "britchka," with a few handfuls of straw thrown on the floor for a bed. Nor were personal comforts any better. Most of the time I slept in a stable, sometimes with nothing but a log for a mattress, some Chicago newspapers for a pillow, and my raincoat for a sleeping-bag. While at Novovaros I never saw butter;



In the hair-cutting camp at Prishtina.

for one whole week I had to live exclusively on eggs and milk, meat being unobtainable.

I found the common people in the mountainous districts of Serbia very ignorant of personal hygiene. Drugs were not to be had anywhere, nor even known. I carried the most necessary drugs about with me, pur-



Vaccinating troops against cholera and typhoid fever prior to their departure for the front. We vaccinated 1200 in three hours

chased at my own expense, for the purpose of distributing them to those peasants who were in dire need. Strange as it may seem, many families whom I visited had never heard of a doctor, and thought I must have descended from heaven. One time I was stopped by a poor woman, who went down on her knees and begged me to attend to her son, a 19-year-old youth, whose leg had been broken three weeks before. I had to improvise a splint out of the bark of a tree, padded with raw wool, there being nothing else available.

I also encountered some terrible cases of ulcers and wounds which for years had received no other care than applications of dirty green leaves; it was the rule, instead of bandaging, for mothers to treat the wounds of their children by applying herbs and leaves. And so it went. It made me sick at heart to see all around such misery, such suffering, and, withal, such ignorance of the simplest tenets of civilization, these people living as they did centuries ago. Let us hope for better days in store.

An Adventure and an Injury—Attacked by Bulgarians

On September 1, I left Novovaros for Uritza by post-wagon (a fourteen hours' ride), with an escort of four gendarmes. En route, the party was attacked and fired at by a band of Bulgarian comitjadas. One of

the gendarmes told me to take his horse, and I galloped away at a terrific speed. In hurdling over an obstacle that had been placed in the road, my horse fell on top of me, causing an injury to the left eye and bodily bruises, with blood oozing from face and hands. I was treated in the hospital at Uritza by Doctor Cheatle, of Rockford, Illinois, where I was laid up for two weeks, the left eye being closed for ten days.

On another occasion I made a vaccination-tour, in company with another doctor, on a hand-car. On this trip we vaccinated some 1500 soldiers, between Veles and Ghevgeli. The vaccinations were made in wooden huts stationed along the railway. As usual, the Bulgarians did not forget to utilize the opportunity, and, while we were traveling on the hand-car, my left ear was wounded and my hat literally riddled by bullets. One of the soldiers who was pumping the hand-car was shot in the hand and we had to assist in pumping.

Arriving in Skopje after the perilous journey from Novovaros, I had a talk with General Popovitch, and I advised him to make preparations for the impending trouble with Bulgaria, as the secretary to the Russian embassy in Constantinople had told me in Novovaros that the Bulgarians were coming within 30 days. Also, while in Nish, I heard the noise of the cannon bombarding Belgrade



1. Doctor Taylor, of Panama. 2. Doctor Castellani. 3. Doctor Lurie.

and saw the flashes at night. I actually was supposed to be there at that time, but had previously been warned by the ministers at Nish not to go.

The Terrible Epidemic of Typhus

To recur to the prevalence of typhus fever in Serbia. Typhus is endemic in Serbia because of the exhaustion of the people from the many wars, and their ignorance and lack of instruction by their physicians, the number of whom has been lessened.

The recent typhus epidemic commenced in December, 1914, and lasted until July, 1915, and was the most severe in European history. Its spread was due to the unpardonable neglect of the Serbian civil and military authorities—a neglect which we here would punish as criminal. It would be utterly impossible to estimate the number afflicted with the disease, as many died unattended by a physician, and others recovered, also unattended. Besides, the statistics are not reliable, as any rise of temperature would be diagnosed as typhus. The military reports do not include the civilian population.

Out of a population of 3,000,000, in Serbia proper, including about 50,000 prisoners of war, one out of every four was

affected. The mortality in hospitals was as high as 50 percent. However, the number of cases of typhus must be an estimate only, since even many of the Serbian physicians diagnosed typhoid as typhus. The hospital and civilian population suffered from the lack of physicians and orderlies, thus making it very difficult to control the dreaded scourge. The mortality was terrible, and, in the community under my observation, to dispose of the dead, 10 to 15 ox carts, piled with coffins, made trips to the cemetery three times a day. The better class of people escaped the infection, as their hygienic conditions were better, although all classes and professions were affected. The American Red Cross and the foreign units managed their hospitals



Visiting the boys at the Columbus University Camp. Schoonmaker, of Harvard, at the wheel.

very much better as to system and discipline than the native organizations.

The medical profession in Serbia suffered immensely, due to their exhaustion and over-



Austrian prisoners making lime. The man marked with a cross is a doctor of philosophy.

worked condition resulting from the care of the sick and wounded. Out of a total of 350 Serbian physicians, 175 succumbed to the scourge. Five American physicians were also added to the number of heroes who sacrifice their lives as heroically as those in the trenches. Out of 15 American nurses, 10 were affected, though, fortunately, none of them died.

During the second Balkan war typhus invaded Serbia, and subsequently has not been completely wiped out. The people were exhausted, and, as the army retreated, the civil population followed, thus overcrowding the already congested southern districts.

Bathing facilities were unknown to the peasants and lacking among the better class. These crowded and unhygienic as well as unsanitary conditions, together with the oncoming of the exhausted, starved and vermin-infested prisoners, who were distributed in the southern part of Serbia, made the situation ideal for the spread of typhus. Disinfection, quarantine, and isolation were criminally neglected. In hospitals two beds would be put together and three patients huddled on them. Every hospital was a hotbed of infection, as typhus patients were scattered among the wounded.

Much credit must be given to the world-wide-known sanitarian, Dr. Richard P. Strong, our director of the American Red

Cross Sanitary Commission, who worked day and night, unceasingly, getting transportable disinfecting and bathing apparatus to localities where they were most needed. It was he who devised the method of bathing soldiers in a freight car improved by installing 15 shower baths, and which was transported from town to town with the other two cars used for steaming the clothes at 250 degrees for ten minutes.

In the general cleanup a thorough sanitation of cities and villages was conducted, bath houses built, sewers dug; proper disposal of garbage and sewage demanded; school buildings and convents which were turned into hospitals were gradually abandoned and the patients put into hospitals in wards designated for them. Thus the spread of typhus was rapidly brought under control; and, as the warm days came, the soldiers, prisoners and civil population sought the open air and sunshine, leaving their crowded quarters and giving plenty of opportunity for personal as well as community hygiene.

I will close here by saying that I had the pleasure of a conference, in the University of Columbia camp at Nish, with Doctor Plotz of typhus-bacillus fame. At this interview, the Doctor informed me that an epidemic of typhus fever was likely soon to be prevalent again, and that he was organizing vaccination-stations in different districts throughout Serbia.

Hematuria and Its Treatment

By CHARLES J. DRUECK, M. D., Chicago, Illinois

HEMATURIA (i. e., the presence of blood-corpuscles in the urine) is always pathological, and it appears in a number of different conditions. The blood may come from any part of the urinary tract, and sometimes the determination of its source is quite easy; still, at other times, this is very difficult, if not impossible. Not infrequently the physician is pinned down by the patient or his friends to name a definite diagnosis; where, however, this happens to differ from what has been previously offered by some other medical attendant, it disturbs the confidence of the patient. An example of this I shall cite further along, this happening in the case of a child which had been afflicted with hematuria for about a year and which had been said to be due to kidney disease. When I diagnosed cancer of the kidney, the family were very skeptical, and it was only after the

mother felt the tumor that she accepted my judgment.

The character of the blood in the urine and its time of appearance, whether clotted or diffused, profuse or scant, and its relation to the act of urination differ, and will indicate somewhat the part of the urinary tract involved. The chemical reaction of the urine also affects the color. (Acid urine is dark-red, while alkaline urine containing the same amount of blood will be bright in color.) Of course, if the amount of blood is small, it may not materially influence the color of the urine. However, the albumin-test will demonstrate even very minute traces of blood.

Guyon (see White and Martin) divides the causes of hematuria into trauma, congestion, inflammation, organic disease, and presence of foreign bodies. Sometimes the pathology

seems hardly sufficient to create the disturbance in the case at hand.

The amount of blood in the urine is variable. If slight, it may not show microscopically; but, if profuse, the urine appears bloody. The microscope is always required to verify the clinical picture. If the urine contains pus as well as blood, the blood will be found in the sediment, the liquid part of the urine being left uncolored.

The more dilute the urine is, the less rapidly will the blood clot, but also the more rapidly will it diffuse and dissolve. Blood clots in the urine have but little diagnostic significance except when they are of the long, thin, cylindrical variety. The latter resemble earthworms in appearance and are formed in the ureter. Short cylindrical clots are without significance. The color of the clots varies from yellowish-red to dark-red. The fibrin clots closely resemble broken pieces of cancer-tissue.

We will divide the sources of hemorrhage into (1) the kidney, including the ureter; (2) the bladder, and (3) the urethra. Let us now consider the causes in each class and draw the differential picture.

Hemorrhage From the Kidneys

It has been said that renal hemorrhage is more protracted than bleeding from the bladder or urethra; but that is uncertain. In all diseases of the urinary tract, the periods of bleeding become more frequent and intense as the disease advances.

1. In chronic diffuse inflammation of the kidney, there is no hemorrhage.

2. In the following conditions, the hemorrhage is slight, and it subsides as the other symptoms are relieved: Acute parenchymatous nephritis (this is frequently the results of accompaniment of variola or scarlet-fever), amyloid degeneration, abscess, embolism, hydatids, purpura hemorrhagica, phlebitis (uterine or crural).

3. In this group, the hemorrhage is profuse and obstinate. Cystic disease of the kidney, chronic interstitial nephritis (here the hemorrhage frequently alternates with hemorrhage from mucous membranes), malignant disease (hemorrhage here is brought on by slight or undiscernable cause; it is made worse by exercise, but is not much relieved by rest).

Guyon says that the hemorrhage of kidney tumor is intermittent. It will stop and then suddenly reappear, the variations occurring frequently. Sometimes the ureter is blocked by a clot and the urine is clear for a few

hours, then the clot is suddenly released and the hematuria appears. The presence of renal casts shows positively that the blood is from the kidney. Tuberculosis of the kidney shows an intermittent hematuria, which is brought on by exertion; but the urine contains pus and debris, which remain in solution and do not tend to settle out. Pain is also present, but is variable, though sometimes amounting to a true renal colic.

The hematuria of renal calculus is excited by the slightest muscular strain or violence, such as under normal conditions would not cause any disturbance. The bleeding is promptly relieved by rest in bed. There is always more or less pain and renal colic, which is reflected from the lumbar region in various directions. The pain of renal colic is quickly relieved by rest in bed, but not the pain of tuberculosis or tumor.

4. Drugs may also cause hematuria, such as oil of turpentine, carboic acid, cantharides, and mercury. It must not be forgotten that senna and rhubarb cause a reddish-brown color of the urine simulating hemorrhage.

5. In severe injuries and malignant disease, the blood may be bright-red and the hematuria may appear to be terminal. In trauma, the location and character of the injury will determine somewhat the source of the blood. That is, a kick in the back followed by hematuria would suggest a contused or lacerated kidney, while a blow on the abdomen, and particularly in the hypogastric region, would indicate a ruptured bladder. A heavy, dragging sensation due to the renal congestion sometimes precedes hemorrhage from these parts, or an attack of renal colic may appear. These pains do not occur in connection with hemorrhage from the bladder or urethra.

Hemorrhage From the Bladder

Associated with bladder lesions that cause hemorrhage, we usually find cystitis and an alkaline urine, and, if so, the mucopus and phosphates so cloud the urine as to alter its appearance and prevent the easy detection of blood. When the urine is ammoniacal, the hemoglobin is frequently dissolved out of the corpuscles, and the cells are then called blood-shadows. These are sometimes confusing when found in the urine. They appear as small bodies or rings of the size of red cells and have no nucleus.

1. The hematuria of vesical calculus is terminal and the blood is fresh. The hemorrhage is moderate unless prostatic disease complicates. (2) In prostatocystitis and (3)

in vesical tuberculosis there also occurs slight terminal hematuria, and in this symptom closely resemble calculus. (4) Polypi of the bladder and (5) fibrous tumors usually show slight or moderate hemorrhage, but (6) villous growths bleed profusely and the blood forms a reddish-brown sediment. A vesical tumor, so long as it is not near the bladder-neck, may not show any other symptom besides the hemorrhage, and it is not palpable in its early stage; hence, the hemorrhage is frequently considered renal. Of course, if the colic or some other localizing symptom appears, that will determine the source of the bleeding. (7) Varicose veins of the neck of the bladder sometimes rupture and cause quite a sharp, free hemorrhage.

A cystoscopic examination must be made in all doubtful cases of hematuria. When the hemorrhage comes from the bladder, there will be, besides the visible blood, frequent micturition, as also pain in all inflammatory, obstructive or traumatic cases. A bimanual examination will frequently detect changes in the bladder-wall or prostate gland or the presence of a tumor. Vesical tumors ultimately necessitate catheterization, and then cystitis is soon added to the clinical picture. When the blood is diffused throughout the urine and the last portion of the urine contains a quantity of pure bright blood, it is probably a vesical or prostatic bleeding.

Hemorrhage From the Urethra

Hemorrhage from the urethra usually precedes the flow of the urine and also recurs between the acts of urination; but, if it does not, it may be squeezed out by stroking the urethra.

1. In acute gonorrhea, mild hemorrhages may occur in any case.

2. Acute posterior urethritis presents only terminal hematuria.

3. Chancre within the urethra sometimes causes hemorrhage that may be obstinate and recurrent.

4. Neoplasms and injuries of the urethra sometimes cause a hemorrhage that may be alarming.

In any case of hematuria, the signs and symptoms other than those of the urine itself must be considered, because the trouble may be outside of the urinary system. Blood appearing at the beginning of urination (initial hematuria), the later urine being clear, must come from the urethra. If the bleeding is from the prostatic urethra, it may flow into the bladder, and in this con-

dition the last urine is often almost pure blood (terminal hematuria).

The Treatment of Hematuria

The great variety of causes of hematuria divide themselves into those that must be treated therapeutically and those that can be arrested mechanically.

During the bleeding, the management consists in: Rest in bed, a liquid diet (butter-milk), and diluting drinks, in order to lessen the tendency to coagulation and promote a soft, free stool. Drugs by mouth are of doubtful value. Guyon gives oil of turpentine, 3 drops every four hours for six or eight doses. Ergot in full doses is also recommended; oil of erigeron and gallic acid have also been used. Any of these may be of value in moderate and persistent hemorrhage. In sudden profuse bleeding that threatens to exsanguinate the patient, give a full dose of morphine, to quiet the restlessness and anxiety. Next, empty the bladder with a catheter or suction-pump, as needed, and then irrigate with a hot antiseptic solution of silver nitrate (1 : 2000) or fluid extract of hydrastis, 1 ounce to the pint. After this, the catheter should be held in the bladder until the bleeding ceases. [Emetine is being used successfully.—Ed.]

If this does not control the bleeding, a perineal cystotomy should be performed, all clots removed and a drainage-tube inserted. This must be done under the most rigid asepsis, because the bladder is very liable to infection after the hemorrhage, and particularly so in cases of tuberculosis or neoplasms. Prostatic hemorrhage is often relieved by opium suppositories, as also by suprapubic compresses.

In conclusion, I wish to cite a few cases that may be of interest in this connection.

Case 1. C. H., a boy 12 years old. Four years previously he was vaccinated, and from that his parents date his trouble. About two years afterward, he had a hematuria, slight as to amount, every two days, for about a month. During this time, the parents say, he appeared healthy otherwise. For the next year, he had occasional attacks of hematuria, but most of the time the urine was normal. There is no record of the urine at this time, except the parents' statement. For about a year now the blood appeared constantly in the urine and increased in amount, until recently it was nearly always present and in large amounts. The urine at best was heavy and smoky-brown in color, and at times it seemed to be largely blood.

As his mother put it, "It is pure blood that runs from him." During the first year of this boy's illness no positive diagnosis could be made.

About six months ago a tumor of the right kidney became palpable and continued to enlarge until it nearly filled the right side of the abdomen. The boy suffered very little pain, experiencing only a dragging sensation in the region of the kidney. He became anemic and of a waxy appearance, and the features were distorted by the anasarca. One time he cut his hand with a knife, but, although the wound was one and one-half inches long and one-half inch deep, it bled no more than a scratch. During the time this boy was under my care I went through the whole list of drugs supposed to be good for hematuria, but not one had any effect.

When the boy died, we made a partial postmortem examination, when the right kidney was found of about the size of a coconut and somewhat the same shape. It was soft and boggy, quite friable and easily crumbled under the fingers. The pelvis of the kidney was filled with a granulating mass, but there were no blood clots, and but very little on section of the growth. I was rather surprised at this. The liver was small and did not present any apparent secondary growths. All of the abdominal organs were very pale. Death was really due to exsanguination. No inspection was made of the chest, as the parents objected. I was not permitted to take out the tumor, but section of a small piece showed it to be a sarcoma.

Case 2. Mrs. A., formerly a nurse. Following the birth of a baby, she was taken with paresis of the neck of the bladder, which persisted after she was up and about. She insisted on catheterizing herself. Later, there developed a sharp cystitis and also calculi. Every two days she voided bits of calcium-phosphate concretions, and as these pieces

broke away there occurred considerable free hemorrhage. Sometimes this hematuria would accompany only one urination, and again would be quite free. In this way, it was intermittent, but persistent, and blood-corpuscles could be found in the urine at all times. Of course, it had a gradually exsanguinating effect.

I made a vesicovaginal opening and found the mucous membrane sheeted over with this stone deposit, beneath which the surface was ulcerated and granulating. Under local treatment and drainage, she soon recovered.

Case 3. About three years previously I had operated upon this 37-year-old man for hemorrhoids, which were internal and found so extensive that I removed considerable mucous membrane. The result was very satisfactory so far as the operation was concerned and the man has had no other rectal inconvenience since. When the bowels moved the first time after the operation (on the fourth day), there occurred a considerable terminal hematuria, and ever since then, whenever the bowels are constipated and the movements are accompanied by straining, there is danger of this hematuria. There are no other symptoms of any kind. The hematuria is always terminal and persists for the next few urinations. Sometimes it is quite sharp; and it may recur in two or three days or months may pass without a sign of bleeding. During the interval there frequently is no blood in the urine. The man frequently passes three or four months without any trouble, and once went eight months. The trouble is always brought on by constipation. He experiences so little trouble that he objects to a cystoscopic examination, hence, I have not made one. I believe this is a case of varicose veins about the neck of the bladder or the prostatic urethra, due to my operation upon the middle and superior hemorrhoidal veins when I removed the piles.

A VERY great part of the disputes in the world come from our having a very keen feeling of our own troubles, and a very dull feeling for our neighbor's; for, if the case were reversed, and our neighbor's condition became ours, ten to one our judgment would be reversed likewise.

—George Macdonald.

Hypnotics in the Treatment of Inebriety

By T. D. CROTHERS, M. D., Hartford, Connecticut

EDITORIAL NOTE.—Doctor Crothers is one of the men who always has something worth saying, and his experience with the drug addictions is very large, so that we can look to him as an authority on the subject of inebriety. Frankly, we don't agree with everything he says—and that's one of the reasons why we like his papers, and this one in particular.

HYPNOTICS that relieve irritation and nervousness and produce sleep have been used from time immemorial, and the most prominent among them is opium which relieves pain, removes the sense of discomfort and exhaustion, and encourages sleep. Dover's powder is one of its familiar preparations and this has come to be looked upon, in practice, as almost a specific for catarrhal and febrile conditions.

Morphine, hypodermatically given for affections of the bowels, cramps, and various other spasmodic conditions, has attained an equal prominence. and its action is particularly fascinating because of the rapidity and certainty of its action.

Morphine on the Battlefield

On the battle-fields of Europe, morphine is almost universally given as the first-aid to the wounded, to check shock and acute pain and relieve the profound exhaustion that follows after severe injury. It has proven to be one of the most valuable first-aids, and no bad after-effects are being noted, except in a very small proportion of cases, where the drug is evidently repellent, causing vomiting.

Persons dangerously wounded, when partially narcotized by morphine, can be carried to the rear with greater ease and comfort than when not so treated. It is found that even after morphine has been given to wounded men for several days, its withdrawal is not followed by any new symptoms.

No other alkaloid of opium or no other hypnotic has given such satisfactory results on the battle-field as morphine. In private life, it seems to be very different. Persons suffering from disturbances of digestion, resulting in acute pain and nausea, are often made very much worse by morphine, particularly after the hypnotic effects have passed away. On the other hand, the very complete relief which is given, produces a species of fascination that calls for its repetition.

Small doses of morphine exert a certain stimulating action upon the heart, together with a sedation that impresses the patient with its great value. Its cumulative action

is very marked in some cases. Thus, a patient given 1-8 of a grain of morphine once a day for several days may suddenly become narcotized and sleep two or three days, or he may become drowsy and inclined to fall asleep in monotonous surroundings. This is the cumulative action of the drug.

Codeine is much milder in its action than morphine and is often given where the latter produces nausea. It seems to have about the same sedative action, without its irritant effects. Heroin, dionin, pantopon, and more than a dozen other alkaloids and derivatives of opium all have a hypnotic action, while some of them exert a special influence upon certain organs. They are all dangerous, because the effects are largely unknown. Thus, a physician discovered that dionin had a remarkable effect on respiratory diseases and thought it was of the nature of a specific. Further examination proved that this particular action was owing to some unknown condition, and was by no means common.

Apomorphine for Dipsomania

In cases of inebriety, apomorphine is very largely used as a relaxant and depressant in the stages of delirium and delusional excitement. This is called chemical restraint, and when the drug is given hypodermatically, in 1-10-grain doses, it is a powerful relaxant and depressant, producing stupor and sleep. Its action is so rapid, and the effects are so profound, that it has come to be a very common remedy in the treatment of acute alcoholism.

Its first effect is an intense nausea, eventuating in vomiting and possibly purging, also mental and physical depression, followed by sleep. The patient who is wildly delirious and combative succumbs at once to its nauseating and depressing effects. The heart drops, from 120 to 130 to 40 or 50 beats per minute, and the vascular tension also is immensely lowered. The stomach, bowels, and skin, all are excited to intense eliminative efforts. The patient sleeps a few hours and awakens markedly prostrated and willing to do anything his attendants may wish him. This prostration passes off in the course of two or three days.

Irregular physicians who conceal the drug impress the patient's mind with the narrowness of his escape from sudden death, and this suggestion often remains for a long time. Where the memory of the effects of this drug remain, the suggestion of the near approach to death is a very powerful factor for the future.

Attempts have been made to treat alcoholics with this drug alone, giving 1-40 or 1-50 of a grain at night time, this producing stupor or sleep, with very little nausea or depression. However, careful physicians soon abandon apomorphine as an alcohol cure, as full of danger and may cause possible collapse. In the hands of one practitioner several cases of fatal pneumonia followed the use of this drug. It evidently produced pneumoparesis. Several irregulars still continue to use it, more or less concealed. Fortunately, apomorphine is a very unstable compound and, unless used very soon after it is prepared, its effects will be uncertain or almost nil.

Morphine and Atropine

Morphine combined with atropine, 1-4 grain of the former and 1-150 grain of the latter, is a favorite combination for relieving the irritation and exhaustion following the withdrawal of alcohol. In some instances, the relief is so complete that the patient insists upon using this drug afterward, and if he finds out what it is he soon becomes a morphine-taker. In some cases, there is a peculiar sensitiveness to the drug, with little or no after-effects. This combination is more or less dangerous, and when a patient is very enthusiastic of the value of certain drugs which have been given him after an alcoholic paroxysm it is safe to assume that some form of morphine and atropine has been given.

Chloral and "Knockouts"

Chloral is one of the hypnotics belonging to the alcohol family that is given very commonly after the withdrawal of alcohol. It is a powerful narcotic in doses of from 5 to 20 grains, and in many instances it produces a certain brief excitement, followed by profound depression. On awakening a few hours after it has been given, the patient complains of intense weariness, fatigue, and inability to do anything, even the most common duties of everyday life. The hypnosis may continue for two or three nights or days, or it may pass into a low-muttering delirium or confusional state, in which the patient will call for the drug again. Insomnia usually follows when the chloral is withdrawn.

It is a very dangerous drug because of its cumulative action, and whenever given should be watched carefully. In the last years, it has come into very common use in saloons and barrooms as a "knockout" drug. A capsule containing from 10 to 15 grains is dissolved in a glass of beer or spirits, and this given to boisterous patrons and persons who become very obtrusive and excitable in the saloon or have attacks of destructive delirium. The effect of this drug, in combination with the sedative effect of beer and spirits, is very marked in producing sudden hypnosis. The patient falls down anywhere, profoundly narcotized. He is carried out, sent to the station house or put in some out-of-the-way place to recover. The interval from the time he was in a certain saloon until he awakens is a permanent blank.

Formerly, saloons doing a large business retained the services of a policeman or strong man who prevented altercations and assaults from delirious customers. Now, the too-wise barkeeper empties a capsule containing 15 or 20 grains of chloral into the beer or spirits called for, and the subject is then urged to go out or to leave the premises. In a few moments, the fellow is quiet and goes off into a profound slumber. And there is no certainty that he will ever awaken from this sleep. Many persons taken to the station-house breathe their last in the cell. The heart is unable to overcome the profound depression from the combined spirits and chloral. The same thing will happen in hospitals where chloral is given without discrimination. A degree of stupor follows that is only overcome by most heroic efforts.

Cannabis indica is another such drug. Its effects are slower, but they last a long time. When given for its hypnotic effects, to remove the alcoholic craze, it may work quickly, bringing relief and partial stupor, or it may not be noticed for several hours afterward, then there occurs a sudden profound depression, with more or less delirium.

Belladonna—Atropine

Belladonna is another of the same uncertain class of drugs, the effects of which vary. Dilation of the pupils and constriction of the throat are always present, but with them occurs a most pronounced depression that goes down to the very verge of collapse. The heart apparently suffers most keenly, and the perturbations in its action indicate some local effect that is not very clear.

When continuously used for hypnotic or similar purposes, the effects of belladonna or

its alkaloids are very uncertain. There can be no question that for this purpose it is a dangerous drug and that a peculiar susceptibility to its effects is likely to be encountered at almost any time.

The Alcoholic Groups

In the alcoholic group, paraldehyde is probably the most valuable hypnotic to produce sleep. Its effects are very transient and more or less uncertain. Where the surroundings are favorable and the patient's mind is calmed by the prospect of long sleep, it works very well; however, its effects on digestion are more or less disturbing and irritating.

In the delirium from alcohol, it may be given with safety. Of the sulfonal group, trional, veronal, and sulfonal are most commonly used. Each of these has a peculiar action, and all of them are more or less cumulative, hence, their use requires caution and study. In small doses, they produce no visible effect. In large doses, the effect may be pronounced, the action being quick, and is followed by considerable headache and digestive disturbances. Veronal is also of this class that possibly may have cumulative actions, while these substances relieve the irritation and depression produced by spirits, they themselves not frequently cause other disorders, and are followed by symptoms which either refer to the drug itself or some latent conditions which the drug has awakened. In the treatment of inebriety, these drugs should be given with caution and for only a brief time and their particular action studied.

A number of chloral compounds, termed chloralamide, chloralose, hypnol, and dormiol, are all names for derivatives and combinations of chloral that are more or less uncertain in their effects.

The Bromides and Coal-Tar Derivatives

Of the salts, the bromides of potassium, sodium, ammonium, and magnesium are excellent sedatives and when given in large doses for a short time are followed by excellent results. The bromides, in the treatment of spirit and drug takers, have a special value, with very little after-effects. The coma which follows from their use is known as bromism, and this should be limited and never allowed to go very far. Some of the specific cures contain bromides. While under their influence the patient apparently recovers from the irritation and depression of the spirits, there appear symptoms of palsy

and paralysis that suggest a bromine origin. This condition can be readily removed by baths and eliminatives.

There is another group of hypnotics, among which phenacetin, acetanilid, pyramidon, aspirin, and also novaspirin are most prominent. Many of these are used with more or less success, but they are uncertain and dangerous when used for any length of time, and all of them may increase the very condition they are supposed to remove.

Prescriptions containing these drugs are favorites with quacks, and, while they relieve the insomnia and pain and cover up the conditions for the time, they should be regarded as dangerous.

Some of the Vegetable Nervines

Among the vegetable hypnotics, hops and sumbul are probably the mildest, although oftentimes they act with great power. They are harmless, in the sense of not disturbing the nutrition or vitality, except in a very limited degree, and can be given with safety.

Hyoscine, the alkaloid of hyoscyamus, is dangerous in alcoholism. While its effects are very pronounced and rapid, its after-effects upon cells and nerve-tissue are so marked and often so long-continued (and obviously due to this drug) that its use should be followed with the greatest of caution, and then but for a brief time. It has had a large reputation as a specific for removing the pronounced irritation that follows the removal of morphine, but there is an uncertainty in this direction, and an unexpected class of symptoms follow that suggest dangerous effects. The most prominent of these after-symptoms are: low grades of dementia, delusions, and anemia of the brain, with incoordination and a variety of motor symptoms.

Where belladonna and atropine are given in connection, there are witnessed marked palsys and very startling changes in the functional activities that cannot be accounted for as a result of the direct action of these drugs.

The coal-tar derivatives are heart depressants and should never be given to elderly persons or those who have marked heart and kidney diseases, and even then for only one or two doses.

General Reflections on Sedative Treatment

Opium in almost any form in small doses is far less dangerous than those just named; and, yet, the possibility of continuing its use must always be considered.

The attempt to treat drug and alcoholic patients by substitution of other drugs equally powerful is not followed by good results. The bromides, while producing distinct poisoning, can be readily eliminated, hence, are less dangerous. Probably of all the hypnotic measures and drugs that are supposed to have quieting effects, hot drinks, showers, douches, various forms of compresses, reclining in a warm bath of a temperature higher than the body, are the most practical and safe of all the means used. Chemical restraints and drug stupors, from palsy of the sensory and motor system, all have reactive effects, and these are to be considered.

Specific drugs of any kind for inebriety and drug taking are scientifically impossible. Up to the present time, drugs that are used conceal and cover up symptoms most commonly. Sulphate of magnesium probably is an exception. This, in many ways, acts as a sedative, by neutralizing and changing the chemical balance of cell and tissue. Long ago, gold was studied and found to be inferior to iron; but the latter, so highly extolled, has an exceedingly limited usefulness. Substituting narcotics for the irritating effects of alcohol, is not the removing of the causes, but simply a covering up and intensifying of the conditions, which would be removed if the causes were taken away.

Chemical hypnotics are always dangerous remedies, because their effects vary so widely. It is exceedingly doubtful if they can be used with any practical effect in cases of inebriety. Experience and a careful study indicate that the great variety of drugs included in the hypnotic family have a very limited action therapeutically. Empiricism has extolled them to a very high degree, but practical experience fails to show their usefulness as substitutes, correctives or remedies.

The inebriate is suffering from toxemias formed within and taken from without, and the only relief and comfort which come from the use of those drugs is narcotism, which covers up the real condition. While these

remedies have a value that is real in certain cases, there is a very narrow limit to this that ought to be recognized according to the conditions of the patient.

There are several vegetable drugs about which considerable literature has been accumulated, embodying more or less extravagant praise. Among them, are two called, in common language, the passion-flower (*passiflora*) and the bull-nettle (*solanum*). The extracts from both of these plants have a pronounced hypnotic effect, and they have been used as specifics; but practically, these effects are not uniform, and sometimes entirely absent, though sometimes positive and satisfactory. So far, little or no after-effects have been noticed from their continued use. They have no cumulative action, like some of the mineral drugs, but the system becomes used to them after a while. Like extracts of hops, their value is uncertain.

Most of the vegetable drugs are more powerful in infusion, than in the form of extracts. When given to inebriates as extracts, they carry with them a small proportion of alcohol, which in itself has a decided effect often very dangerous. The list of narcotics is increasing constantly, and where the extracts are made with acetic acid the spirit effect is obviated.

Practical men are constantly looking for some comparatively safe drug of the hypnotic class. Whether they will succeed in finding it, is a question, but at present the treatment of inebriety with hypnotic drugs should be conducted with great caution and a full recognition of the possibility of doing much more harm than good.

So far, hydropathy and electrotherapy are the most prominent and safest measures to be used in this condition.

[Doctor Crothers says nothing about the sedative action of solanine, the *alkaloid* of *solanum*. I wonder if he has given it a trial. Personally I have found it as efficient as the bromides, and just as safe. We shall be glad to get the experience of other physicians regarding the treatment of alcoholism.—ED.]



Hints About the Automobile

For the Doctor Who Runs a Car

By A. L. BENEDICT, M. D., Buffalo, New York

THIS article is written solely for the inexperienced.

In buying a car, two methods may be pursued: (1) Learn how much money you can raise on a mortgage, put that all into a car, then trust to Providence for enough more to run it. Or (2), take your average income as a basis, then estimate how much of this you can really afford to charge to transportation; but bear in mind that buying a car is only an initiation and that the annual dues in the fraternity of automobiles are from one-half to about one and a half times the cost of initiation. More specifically, the minimum upkeep cost of the smallest automobile, not considering motorcycles and cycle cars, is 3 cents a mile, distributed pretty equally among (1) gasoline (2) oil, (3) tires and (4) repairs incident to use; and insurance, garage-rent, and other items. A car costing \$2000 will have a mileage-cost of about 10 cents, while a large car, with chauffeur, will cost 30 cents per mile.

Start With a New Car

Quite aside from considerations of pride, it is better to start with a new car, as the guarantee, while not approaching in value what you might expect from general experience with other kinds of purchases from reliable firms, does have a considerable value, probably more than you can save on a second-hand car, until you have had several years' experience. No car is foolproof. Eternal vigilance is necessary, not only to protect you from serious injury or from becoming a homicide, but to keep your expenses for repairs and maintenance within a reasonable allowance. The slightest carelessness on your part (quite aside from collisions) may spoil your engine, and you may be amazed to find that what you considered the extreme of caution has resulted in a bill not covered by the guarantee, because you have done something or left undone something as to which you have no conception.

Your first car is much more liable to be damaged than are later ones, and it will wear out quicker. The mere items of tips for making it go and of charges for adjustments scarcely warranting the name of repairs, and which you will subsequently effect yourself, will probably come to \$50 or even \$100 the first year.

Again, you will probably base your conception of caution in driving upon previous experience with a horse or bicycle. That is to say, you will drive at moderate speed, follow the ordinary rules of the road, do what is reasonable and sensible, occasionally stop or turn without looking behind you, fail to realize the danger from mud, rain, mist, and so on, and consider that others on the road will look out for you as you do for them—and you will have a bad accident. You have got to know what is going on before, behind, and at both sides of the road, all the time, must keep out of the way of drivers of commercial vehicles, speed-fiends, ladies and clergymen in electrics, and drunken drivers; and you will be surprised to learn that the greatest danger of all is, not the speeder, but the slow driver, and especially the man dozing on the seat behind a team of horses which amble along anywhere between the sides of the road and turn into private driveways whenever they please. Some have, doubtless, realized that the one-train-a-day railroad is more dangerous than the one that runs trains every few minutes, but they have not come back to tell us of their experience.

For all these reasons, your first car is relatively more vulnerable and more expensive in proportion to its first cost than are subsequent ones, and so, it is a wise plan to begin with a cheaper car than you can ultimately afford. Besides you will also then have spare money to purchase accessories, most of which will cost you more in indirect damage than their price. Buying a car and adding accessories to it is more or less on the order of marrying a man to reform him; but we all do it the first year, and some accessories, possibly 1 percent of all, are really useful.

The writer started with a cheap car, with the idea of getting a better one after learning how to take care of the various organs, and he is about to purchase the fourth consecutive car of the same make, because of the conviction that transportation is not worth more than the expense of such a vehicle, and that, on the whole, he cannot better himself short of a very expensive car and a mechanic to take care of it.

One further hint of choice of car may be given. Do not get a new and untried make. Do not get one that involves novel principles or that has ceased to be manufac-

tured. The more generally used a car is, the easier it is to get repairs and parts, especially at a distance from large towns.

Trouble with Cranking and Carburetors

Let us imagine that, like most tyros, you have bought the car early in the spring; that you have learned to run it, but have not gone far enough to be troubled as to shortage of water, oil, grease or gasolin. After your first long stop, the car does not start on the first or second cranking, as the agent said it would, nor on the third or fourth, which he assigned as the extreme limit. Let us further imagine that, after 20 or 30 crankings, you have not ruptured a blood-vessel, but are still interested in the car. It is possible that just as a pig on the endless chain of a slaughter house may not have been successfully stabbed, one of the several details of the car may have been missed in the same process, but this does not usually happen.

Nor is it probable that your troubles will be remedied, as one of the interested bystanders suggests, by putting in a battery. The car really does crank just about as well on the magneto, though you will put the same truth in the opposite way, that it cranks just as badly on the battery, if you do take the trouble to get one at this stage.

The chances are that the foolproof carburetor which is "perfectly adjusted for all conditions" gives too lean a mixture of gasolin and air for starting. This is almost certainly the case if, after priming three or four times, the engine sputters and dies out.

The carburetor contains a needle-valve that is closed to air by pulling the priming-rod and also by screwing down a brass disc on the dashboard. Cranking then draws in more gasolin and makes a richer mixture. Turn off the air by turning this disc to the right, just as you would turn off any normal screw device. You will see, by raising the hood, how the connection is made. If the disc will not turn, it is because the connecting rod is locked by a nut on top of the carburetor, near where the rods join it. Loosen this slightly. Mark an arrow on the disc with a pencil and open up the carburetor 1 1-2 full turns if the temperature is below freezing, 1 1-4 if 30 to 40, 1 if 40 to 60. These arcs are merely approximate. Then prime while cranking four quarter-turns, letting the primer-wire slip back if the engine starts. If it does not start, it should do so within two or three quarter-turns more. However, with the engine thoroughly cold, there is practically no danger of "flooding," and, if the sparking

system is not in good condition, one may prime 20 times before starting.

But, the main thing is, to have a rich mixture; and, whether for starting or for increased power on hills, this is better secured by regulation of the spindle-valve than by priming. A dash-priming-cup or spark-plugs with faucets may be used for priming by direct admission of liquid gasolin; still, priming by suction through cranking in gasolin, with the air shut off from the carburetor, really works as well.

Remember that all this applies to a *cold* engine. As soon as it is heated by running, turn down the spindle-valve to, say, 1 full turn for cold weather and 3-4 turn for warm weather, or, for steady runs at high speed or even less so long as the engine runs smoothly and there is no "spitting" and "coughing." In cold weather, it is usually necessary to prime once to start even after a few minutes, and twice after about fifteen minutes.

Your next unpleasant experience, short of accident or failure to supply gasolin, water, and oil, will be that you cannot start at all, especially after kind but unskilful Samaritans have cranked for you and opened up the carburetor. The probability then is that the sparking-system is not in good condition and, in addition, that the engine has been flooded. If this latter term once is thoroughly understood, it will be of practical benefit. The figure suggests a liquid, but no amount of liquid gasolin short of filling the cylinders will "flood" an engine. Flooding signifies the supersaturation of the air with gasolin vapor, so that the mixture is not properly explosive. Hence, it is not likely to occur when the engine is cold and in cold weather, but it will occur under either or both opposite conditions after a few ordinary crankings, if, for any reason, the spark does not explode the mixture. It may happen that after you yourself are cooled off, the engine has also cooled off, so that enough gasolin has condensed to leave a properly explosive mixture, and then the next crank may start it without trouble or also the sparking-system may continue to cause failure.

The Sparker

The electric current takes its course from (low tension) magneto or battery to a set of Ruhmkorf coils; thence to the commutator, or timer, in which a roller, revolved by the engine, makes and breaks a connection with terminals on the inner circumference; thence to the spark-plugs, leaping a gap through the gasolin vapor to the outer wall of the spark-

plugs that are screwed into the solid wall of the engine, and this grounds the circuit.

There may be an inherent defect in the magneto (rare) or the magneto may have been wet (uncommon and spontaneously relieved in many instances simply by standing). Corresponding defects in the battery-current are common, as from exhaustion of the charge of a storage battery or drycells, or any one of the latter (four being usually employed), or from loose connections.

One can tell by the buzz of the coils whether the battery-current is efficient; and, if the engine once is running, by switching from one to the other source of electricity, this part of the circuit can be differentiated from distal parts. A conducting wire may be broken anywhere, but this is rare and usually easily detected. A loose, dirty, greasy connection at any binding-post will interfere with the current. The first can be detected by trying to twist the terminal in the post, the latter, by inspection. Terminals to posts should be brightened occasionally with emery cloth or fine sandpaper or a file, but, if tight, lack of luster is not a common cause of failure of passage of current, while grease over a tight connection does not usually interfere and for certain posts is almost inevitable.

A Lot of Trouble-Spots to Look After

If the battery does not work, loose connections are usually easily detected, and lack of voltage can be determined for each cell by means of a tester or even by making a connection through the wet finger or the tongue. Granted that the battery is all right, the trouble is usually at one of the two ends of the wire from the magneto, one under the floor and the other in front of the dash, under the hood. It may also be under the key-plate in the coil-box. If there is no battery or it is out of order, these places should also be inspected. Next, inspect the binding-posts for the units (4 in ordinary cheap cars) under the hood, on the dash, on top of the spark-plugs, and at the timer.

Managing the Spark-Plug and Coil

If the engine can be made to go, but works unevenly, the trouble is usually at one of three places: a coil, a spark-plug, or a timer connection. Allow a moderate feed of gasoline and advance the spark, uncover the coils and hold down three at a time. If the single unit allows the engine to chug for a minute or two, the corresponding set of units may be considered to be all right. If the engine

stops or there is a hiss, a cloud of smoke from under the hood and then a stoppage, the trouble is with that set of units, and, in the latter case, the particular spark-plug is probably loose somewhere.

The coils from your right to left correspond to the spark-plugs from front to back. By shifting coils in the box, if the unit that is at fault changes correspondingly, the trouble is almost certainly with a coil and usually owing to an oxidation of the coil-points. File them with a flexible nail-file (which should always be at hand) until the opposite points are smooth, flat, and bright. This procedure will be necessary every few months or often every few days, depending upon the qualities of the coil. This may be all that is necessary. If the coil is still dead—that is, if no spark passes between the points, or if a broad sputtering spark occurs, the distance between the points must be adjusted, not forgetting that there is an obvious device for setting them. As a rough rule, the points should be four turns of the set nut apart from the point at which they are just in contact, as determined by sighting between them at a light. Until you have acquired considerable experience, file and adjust one coil at a time, for otherwise you may put them all out of commission.

If, on the other hand, shifting the coils does not alter the location of the nonfiring unit, the trouble is almost certainly with the spark-plug. With the forceps (as a general rule, nothing about an automobile can be made tight enough with your fingers), loosen the nut that holds the wire to this spark-plug, then shift the wire up somewhere out of the way. Next, with a small wrench, loosen the upper part of the spark-plug so that it can afterward be removed without using a vise. Then, with the regular spark-plug-wrench, remove the base of the spark-plug.

Inside, it always looks dirty and greasy, but, if there has formed a deposit of soot, or if the two terminals inside are too close or too far apart, or if the porcelain is cracked, it will not spark properly. Unless you are expert, insert a new, properly adjusted spark-plug—three or four of which should always be carried. Use the spark-plug recommended by the manufacturer; do not try bargains or fancy types, unless thoroughly tested by disinterested persons.

Now, if the engine is hot, use about all the strength you have in screwing in the spark-plug, but be careful that the wrench does not slip, which may cause damage to other parts or hurt your hands. One of the proud-

est moments of the writer was when a mechanic told him he had got a spark-plug in so tight that it was almost impossible to remove it; but this had been inserted with the engine cold and had become set by rust. Then connect the wire. If the terminal keeps on turning after the round nut is screwed down tight, it is because a nut below, over a compression-washer, is not tight. Use a forceps for this, and do not apply too much force, lest you crack the porcelain.

Later, you can clean spark-plugs fairly well by soaking them in gasolin or carbon-solvent and wiping them, then filing the terminals and scraping out any soot. The terminals should be adjusted so that a dime can just pass between them, with light pressure. Later still, you can clean spark-plugs more thoroughly by taking them apart and re-assembling; noting carefully, however, the exact arrangement of parts and studying their functions.

A spark-plug may spark all right, but the corresponding cylinder may not give efficient service, because of a crack, carbon deposit, imperfect action of valves or leakage around any of the joints of the plug. Valve grinding is something with which the amateur should not meddle, and, so, it will not be considered here beyond stating that the general opinion is that valves do not need to be ground as long as compression is good, that is to say, till the crank turns too easily. Leakage about a spark-plug can be tested by applying oil or water and watching for bubbles.

Then the Timer, Too

Sparking defects may also be owing to trouble with the timer and its connections. The rods holding the timer in place or regulating the advancement and retarding of the spark may make a short-circuit with a timer-terminal, or also a self (?) starter or other device attached beneath the timer may do the same. The timer may be dry or gummed up with oil. The one lubricant that in the writer's experience has proved satisfactory is, pure mineral oil, allowing about 1 Cc. or 1-4 dram, for every 200 miles. With this provision, the timer may go several thousand miles without being cleaned.

Even only to detect loose and greasy connections, it is usually necessary to remove the timer. While in a sense the timer is a delicate mechanism, there is no danger in removing it if reasonable care be used, particularly to observe the position in which it should be replaced by the vertical alinement of the central attachment and the oil-aperture,

and the order in which the various parts of the attaching assembly go. It is just as important, though, to keep the timer clean on the outside as well as inside.

If it becomes necessary to remove the terminal wires for cleaning, removal of grease, rewinding of the end, and so on, do so one at a time, in order to prevent confusion. Theoretically, timer trouble affects one particular spark-plug, permanently. Practically, a lump of grease and dirt or a short-circuit may come in contact with a different terminal.

Care of Transmission Brakes—Safety First

It is important to remember that, in operation, the brake, transmission and all devices controlling movement must be applied gently and gradually, in order to avoid any sudden and jerky action of the machine; except, of course, when one may have to stop suddenly. Be sure that you understand the working and principles back of all of these contrivances and the exact way in which they are operated. Until you can control them automatically, do not speed, and when crossing streets "run on neutral." Rehearse for possible emergencies. Also, get it thoroughly fixed in your mind that the "emergency"-brake is not what it is called, but is to be applied solely either for locking the car at a stand-still or to save the service-brake in descending a hill. Do not take the meaning of "right of way" too seriously; rather, at the beginning, cultivate the spirit of "After you, my dear Gaston." Remember that either brake works, ultimately, by friction of the rear tires upon the road, that any undue and sudden use of the brakes wears out the tires quite rapidly, and that, if the road is slippery, no kind of brake can stop your car. Do not use the brake and the reverse together. If the emergency is so great as to warrant reversing while moving forward, at the risk of doing serious damage to the machinery, do not spoil the effectiveness of the reverse by braking at the same time.

If any of the moving and braking-devices work jerkily or do not engage, have them fixed immediately, especially before undertaking a long or hilly trip. A little slack may be easily taken up by removing the floor, the cover of the gear-case, and with a wrench turning certain adjustment-nuts. You can see how they work, by careful inspection. This is only of temporary service, and new bands will soon be required. Undue wearing of transmission and brake-bands may, for example, be due to insufficient oiling, because

the pet cock or gauge indicator is not accurately set for that particular car.

On long descents, the engine may be used as a brake by turning off the spark; the high-speed operation of the engine offering moderate resistance, and the low speed still more. The engine will crank itself upon turning on the spark; however, the accumulated gas is likely to burst the muffler. Simply shutting off the gas at the throttle will not prevent this, but it can be prevented by turning the spindle valve shut or by coming to a full stop and allowing the engine to cool, then cranking up. For example, going down a very long and steep hill, it was found that both brakes were inefficient. The road ended in a T at a state road. In this emergency, the spark was turned off and the low speed put into operation. This reduced the speed to a comparatively safe degree and the brakes held sufficiently to stop the car when level was reached. Had any obstruction been encountered, such as a wagon in the road, the reverse, which wears longer because of being less used, could have been used, with light pressure, as a brake.

The amount of oil used up by the engine differs for different cars, being more for air-cooled engines than for water-cooled, ranging from 400 miles per gallon for cheap cars to 1000 miles for the better grade. The oil level should usually be taken on a level road or floor, an allowance of several minutes being made at least every 50 miles, for the oil to gain its actual level after the engine is shut off, if the gauge level is affected by running the engine. Supply oil rather frequently and in small quantities, to prevent fouling of the spark-plugs. Always carry enough for a trip, unless it be a very long one and includes stops where a supply can be obtained. Do not spill any oil, or, if you do, clean it up immediately. Carry enough so that, if a gauge-glass breaks and the case is drained, it can be refilled.

Pet-cock gauges under the car may break from the upturning of a loose stone; so, inspect, if you hear a noise of this significance. This is a rare accident and almost impossible if a mailing-case or some similar device is applied over the glass. Pet-cock gauges are more reliable than those indicating through long stems on floats, but they should be cleaned occasionally, and the oil level must be sighted against a good light after the glass becomes stained. If the gauge apparently indicates an impossible economy in oil consumed, investigate, as there may be a stoppage somewhere.

Greasings and oilings should be standardized at 50, 100, 200, 500, 1000, and 5000 miles, as indicated by the cyclometer for total mileage. A few miles make no difference, but keep close to the even numbers. Grease can be carried in an ordinary ointment jar. Learn what lubrications are necessary and what do not affect the running and wear of parts. Some cars require only engine oil and grease for all other lubrications.

Water or, in cold weather, wood-alcohol of 10 to 30 percent, should be supplied to the radiator at least every hundred miles, oftener for very hot weather or much driving on low gear. Use soft, clean water, straining it if it is obtained from a pump. Watch the rubber connections for leaks, especially if your car leaves a little puddle when it stands, although in cold weather condensed vapor from highly volatile alcohol mixtures will usually deposit a little water or ice beneath the radiator. Boiling occurs inevitably with some cars in hill climbing on low speed, but it may also result from a broken fan-belt, which latter should be inspected occasionally. In cold weather, use a hood-cover, but keep it open in front when running, unless for very short distances. Boiling often indicates too little or too dirty and thick engine oil.

Keep the water level in the radiator a little low in cold weather; know how much of it your radiation system holds altogether; start with a 10 percent wood-alcohol mixture, which will prevent freezing, down to 18° F., and in case of further descent of temperature add pure wood-alcohol to strengthen the mixture, as calculated algebraically, so as to withstand any degree of cold. Every increase of 5 percent in the wood-alcohol percentage reduces the freezing point about 10° F. Of course, the alcohol must be added before freezing occurs and just before the engine is to run again, so as to secure diffusion. A 30 percent wood-alcohol will protect down to -5° F. Glycerin, about a quart for a radiator, prevents, to a large degree, the volatilization of alcohols at a higher rate than water. It is expensive, and, by using a 1 : 9 solution of wood-alcohol and counting it as 10 percent, the excess volatilization is approximately balanced. Wood-alcohol has a slightly greater protective action against freezing than denatured ethyl-alcohol, while costing the same. In the spring, simply add water to the wood-alcohol mixture in the radiator until all danger of freezing is past, then drain and wash out the radiator. As water costs nothing, repeat the process every month or so during the summer.

Cystitis and Its Treatment

By GEORGE H. CANDLER, M. D., Chicago, Illinois

Author of "Everyday Diseases of Children"

[Continued from page 144, February issue]

AS HAS already been stated, to cure chronic cystitis may or may not be a simple matter, everything depending upon the causative condition. It is remarkable how quickly a hitherto rebellious cystitis will disappear when a stricture is dilated, a calculus removed or a gonorrheal infection controlled.

Not at all infrequently prostatic hypertrophy is the *causa causans* and massage of the gland, the use of the psychrophore and high-frequency (rarely the galvanic) current, together with a course of chromium sulphate internally, will prove promptly curative. Unfortunately, however, the annoying cystitis accompanying true senile prostatitis is controlled with extreme difficulty, if at all. The hypertrophied prostate causes retention and, as a result of the degenerative change, which has occurred, it is impossible to effect reduction of the enlarged gland.

I have, however, succeeded in giving very great relief to patients so afflicted by emptying the bladder and irrigating with a warm boric-acid solution, consisting of 1 dram of the acid to 10 ounces of water. This fluid should be withdrawn and 1 dram of a solution of thymol iodide in a purified cottonseed oil base injected and allowed to remain until voided at the next urination. If the urine is very foul and ammoniacal, 5 to 10 grains of boric acid should be given three times a day for one week and then be replaced by arbutin, grs. 2; hexamethylenamine, grs. 5; eupurpuroid, gr. 1-3. In all these cases the bacillus-coli or the Van Cott combined bacterin may be administered with advantage.

Under such medication three or four irrigations usually produce a very marked improvement; indeed, patients quite often state thereafter that they experience little or no distress beyond difficult and frequent micturition. Naturally, some cases prove more rebellious than others and now and then we are compelled to advise operation or regretfully consent to the induction of catheter life.

It is well, perhaps, in passing, to impress again upon the physician the absolute necessity of an aseptic technic. It will not do to insert a sterile soft-rubber catheter and then place the irrigating solution in a half-cleansed

syringe. Further, every precaution will be nullified if the hands of the operator, meatus, and urethra of the patient are unclean.

I have seen catheters dipped in carbolyzed oil, held under the hot-water tap for a few moments, finally lubricated with glycerin, and passed (with considerable difficulty and manipulation) through an uncleansed urethra. Quite naturally, doctor and patient agreed that washing out the bladder "didn't do much good." After using, rubber catheters should be cleansed in a lysol solution, the fluid being forced through the lumen with a hard-rubber syringe, then rinsed in boiled water and kept in a 1 to 2000 chinosol solution. Before insertion, the tip may be lubricated with borated petrolatum. Metal or glass recurrent catheters can be boiled or sterilized by dry heat.

Before any instrument is introduced the patient should urinate and wash the glans and prepuce thoroughly with warm water and soap. The physician then irrigates the urethra with any mild antiseptic and covers the penis with two thicknesses of sterile gauze. A small opening is made over the meatus and through this the catheter (also held in gauze) is introduced carefully. When the long-nozzled, hard-rubber syringe is used to instill the thymol-iodide mixture, equal pains should be taken to maintain asepsis.

Methods of Irrigating the Bladder

There are several ways of irrigating the bladder: At the office, the Janet method may be employed, but for patients treated at home (as many of them must be) the physician will depend upon the catheter and fountain or piston syringe. Wherever urethritis and cystitis coexist, the Janet method should be employed, if possible; also, where there is a pronounced stricture (which should be divulsed or incised) or where the passage of the catheter causes hemorrhage. A blunt tip, shield, and cut-off can be easily carried and kept surgically clean, and enameled metal reservoirs are cheap and readily obtainable.

The regular fountain syringe may, of course, be used with a proper tip and shield, but on no account should the "household outfit" be employed. A 6-ounce, glass-barrelled syringe serves excellently for ordinary bladder washing. When filled, the nozzle is inserted into the orifice of a 12- or 14-gauge French

catheter already passed, and the fluid is expelled into the bladder in jets—say one ounce at a time. The bladder must not be overdistended and care should be taken to introduce the solution without undue force. In certain cases, irrigation can be more satisfactorily performed by means of a fountain syringe with cut-off and tapering tip.

Local Antiseptics in General Use

Naturally, different conditions demand different remedies and a host of agents have been used locally in the various forms of cystitis. Boric acid is cleansing, soothing, and non-toxic; chinisol, from 1 to 1000 to 1 to 2000, is decidedly bactericidal; formalin, 1 to 5000, may be employed with advantage where there is much pus in the bladder; permanganate of potash, 1 to 3000, is useful if a urethritis is present; bichloride of mercury is effective, but must be used with extreme caution.

This last-named drug is particularly undesirable where erosions or breaks of the vesical mucosa exist or where it is practically impossible to withdraw *all* the fluid injected. It has been stated that absorption does not take place from the bladder, but knowledge of more than one case of bichloride poisoning following irrigation with 1 to 2000 mercury solution leads this writer to hold a different opinion.

Some of the Silver Preparations—and Others

Probably the three most useful drugs are boric acid, ichthyol, and silver nitrate, but argyrol may in some cases replace the latter. Silver nitrate may be used in the proportion of 1 to 1000 to 1 to 5000. It is usually advisable to commence with the weaker solution and increase carefully. If irritation is apparent the bladder should be washed out immediately with physiologic salt-solution. The best results follow semi-weekly irrigations, although, if the bladder is tolerant, every other day is not too often.

Argyrol and protargol are rarely used save for small injections of one or two drams—the first in 5 to 20 percent and the latter in 1 to 5 percent solution. Not a few G. U. men first wash out the bladder with silver-nitrate solution and then inject the smaller quantity of argyrol or protargol solution. Oily preparations should not be used after any of the silver salts. I am not prepared

to explain why a reaction occurs, but it almost invariably does, and the patient will complain of intense pain for several hours.

In retention-cystitis of old or middle-aged men, with more or less hematuria and intense burning or spasm after micturition, nothing affords greater relief than irrigation with calendula and hamamelis. First, of course, the viscus should be thoroughly cleansed with boric-acid solution and any alkalinity of the urine corrected by appropriate internal medication. After three ordinary irrigations, and a week's use of arbutin and hexamethylenamine, inject every second day 4 ounces of the following solution: Aq. ext. hamamelis, oz. 1-2; aq. ext. calendula officinalis, oz. 1-2; aqua dest. q. s. ad ozs. 4. Even better results follow substitution of calenduline (Lowry), which contains in addition to calendula a soluble bismuth salt and a very small quantity of resorcinol. It is used in the same proportions.

Under such medication, even small but extremely troublesome ulcers have healed within a month.

In Irritable or Tuberculous Bladders

In extremely irritable or tuberculous bladders gomenol oil is used in 10 to 50 percent solutions. It is decidedly to be preferred to the old iodoform emulsion, but in my opinion inferior to euarol, i. e., thymol iodide in oil.

None of these measures will prove curative or even materially beneficial, however, unless gross lesions are recognized and corrected. For instance, a urethra so contracted at any point that it will not permit the passage of a 28 or 30 French-gauge catheter calls for the use of sounds or dilator. Should these fail, external or internal urethrotomy will be necessary. Again, even daily irrigation will fail to relieve (even if it does not aggravate) the cystitis accompanying the more pronounced form of prostatic hypertrophy. It is safe to say that when the projecting gland causes the constant retention of one or two ounces of urine, enucleation is essential—provided always that the physical condition of the patient is sufficiently good to warrant subjecting him to the unavoidable shock of such an operation. Vesical calculi and tumors should also be removed as soon as possible. Later, the concomitant cystitis can be treated effectively.



What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

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EDITORIAL NOTE.—This is the second paper in the series of articles upon chronic diseases which Doctor Butler is contributing to "Clinical Medicine." The first paper appeared in January. On account of the Doctor's temporary illness, we were compelled to omit the second installment from the February issue. Hereafter we hope to be able to present a paper upon this topic from Doctor Butler's pen, every month, for some time to come.

[Continued from page 44, January issue]

Focal Infections

THE relation of focal infections to chronic diseases and the means of detecting them are important.

It is now generally believed that the majority of chronic diseases begin in some infective focus. We know that syphilis, tuberculosis, and many others begin locally; and besides these there are many that very probably begin locally, although this has not as yet been fully demonstrated. However, we must search for an infective focus and, if found, remove the same if possible. It is fairly well proven that endocarditis, myocarditis, pericarditis, and chronic arthritis arise from some focus; and these foci may be about the teeth, tonsils, accessory nasal cavities, prostate gland, genitourinary tract, gall-bladder, and intestine.

In the prognosis of these cases, however, we must remember that a supposedly causative focus found and eliminated may not result in recovery, for there may be other unknown causes or the focus found may not be the one at fault.

Cholecystitis, nephritis, "neuralgia," neuritis, and certain of the anemias may depend for their existence upon obscure foci of infection. No case obscure in origin should be passed over without diligent search for some focus of infection.

Among the innumerable bacteria responsible for many of the chronic diseases, the streptococcus-pneumococcus group predominates. This does not deny any causative relationship to other organisms, but indicates a strong predilection on the part of this particular group to produce focal infections and to resist destruction. The recent discovery by Smith and Barrett of an endameba in alveolar pyorrhea—and confirmed by other writers—shows that other organisms may be causative factors. In an exhaustive paper on the elective localization of streptococci, published by Rosenow in *The Journal of the American Medical Association* for No-

vember 13, 1915, the author, in closing, says:

"The results detailed in this and previous papers seem to bring necessary experimental proof that chronic foci of infection play a most important role in causing systemic disease, a fact which has been observed and frequently commented upon by different observers, but has been recognized in its full clinical significance especially by Billings. A focus, such as a pocket in the tonsil, which cannot heal for mechanical reasons and which is constantly filled with pus and necrotic material teeming with bacteria, must be regarded in the light of these findings as a culture-tube with a permeable wall, affording abundant opportunity for the entrance of bacteria and their products."

"The proceedings necessary to discover foci of infection are sometimes simple, often complex, and the search is sometimes exceedingly difficult and trying principally because of the known lack of negative evidence," writes Dr. S. Marx White, in an article on the relation of focal infection to systemic disease, appearing in *The Journal-Lancet* for June, 1915. I quote still further from Doctor White, as follows:

"Foci of infection can be so surrounded by normal tissue or so deeply hidden and symptomless that only a profound conviction as to the existence of some focus, coupled with a most painstaking search, will reveal them. The task is not one which any one individual can perform, as a rule. Trained men in each particular field must take part, but best of men will sometimes fail to uncover a lesion in his particular field, and the case may need repeated study.

I have had more than once to demand repeated examination, in the face of a negative report, when some slight localizing indication gave me a clue. I recall vividly one patient whom I had caused to be examined by some of our best rhinologists four times before a closed focus containing a dram of foul pus was found in the ethmoid cells. The nasal

cavity was of normal appearance, so far as careful inspection revealed, and it was necessary to open the region by probing. This was before the days of successful and routine x-ray examination of the cranial sinuses, and failure does not, or should not, occur so readily nowadays.

The Tonsils as Factors in Chronic Disease

I think particular caution is necessary regarding the tonsils. This is not the place to discuss the indications for tonsillectomy, but I have not infrequently felt called upon to insist upon this operation when properly conservative colleagues, specialists in that field, have thought the tonsils themselves did not present sufficient evidence of existing disease.

I believe that we as often will find systemic infection resulting from tonsils which are small, adherent to the pillars and more or less buried out of sight, as we do from the frankly and evidently inflamed ones. In such cases, and where no other foci are to be found, the decision to perform tonsillectomy rests more upon whether there is evidence from some local focus than upon the apparent condition of the tonsil itself. This attitude has frequently brought a reward, the pathologist finding evidence of active infection or the operator finding a small deep abscess in cases where the tonsil, on clinical examination, gave no sign of active inflammation.

The recent activity in looking for and finding abscesses in the jaws affords a new illustration of the method of advance in knowledge by the development of a new technic. Without the radiogram, using small gelatin films, which can be placed in the mouth and thus recording the condition of the teeth and maxillæ, a search for infection would be laborious and incomplete. Even with the x-ray plate great care and experience is necessary for interpretation; and this must be combined with a careful clinical study by the dentist, or else serious errors may arise.

The method of management in most cases of dental infection combined with systemic disease must be determined by the physician and the dentist in cooperation. The efforts always must be to preserve the teeth when certainty of eradicating the infection is not sacrificed thereby.

Success in the discovery and management of focal infections anywhere in the body is founded on cooperation. The internist, the roentgenologist (as contrasted with the radiographer), the rhinolaryngologist, the dentist, the genitourinary surgeon or the

general surgeon and the immunologist may be called, one to help the other. It is to be hoped that they would not all be needed in any one case!

Gastrointestinal Infections

One of the most common sources of infection is the gastrointestinal tract. A healthy condition of the bowels, with free elimination, is of the utmost importance in the treatment of all chronic diseases. In his "Manual of Physiology," Stewart writes: "In a body which is neither increasing nor diminishing in weight, the output must exactly balance the income, and all that enters the body must sooner or later, in however changed a form, escape from it again. In the expired air, the urine, the secretions of the skin and the feces, by far the greater part of the waste products is eliminated. Thus, the carbon of the absorbed solids of the food is chiefly given off as carbonic acid by the lungs; the hydrogen, as water, by the kidneys, lungs, and skin, along with the unchanged water of the food; the nitrogen, as urea, by the kidneys. The feces represent chiefly unabsorbed portions of the food. A small and variable contribution is that of the expectorated matter and the secretions of the nasal mucous membrane and lacrimal glands. Still smaller and still more variable is the loss in the form of dead epidermic scales, hairs, and nails. The discharges from the generative organs are to be considered as secretions, with reference to the parent organism, and so is the milk and even the fetus itself, with respect to the mother."

For many years, we have understood the grave importance of malnutrition; but, with the still more serious subject of faulty elimination and excretion we have not been so well acquainted. If the various excretory organs do not carry out their functions properly, life is destroyed much more rapidly than when food is being withheld; and the continuous imperfect elimination is a momentous issue.

The superior importance of the functions of *egestion* over those of *ingestion* was pointed out by Marshall Hall in 1842. When the system fails to rid itself of its own carbonic acid, it is soon poisoned. The excreta eliminated through the urine are powerful nerve poisons, the retention of which gives rise to coma and convulsions; while bile retained in large proportion is equally injurious. In fact, it seems that the assimilation of all foods is attended or followed by

the production of principles of an extraordinarily destructive character, either as injurious products of the food when split up within the digestive tract or as waste matter, the result of hystolysis.

The problems concerned with retrograde metamorphosis are very important, especially those connected with the nitrogenized substances, the components of which do not merely go toward tissue building and then, through a process of oxidation, change from one form of hystolytic product to another; for, they do not break up, in the tissue destruction, into creatin, creatinin, tyrosin or other early-stage products of tissue decay, then change into urea and uric acid, merely. In all these forms, they are, when in large amounts in the system, dangerous poisons; and they also become ferments within the organism, the deleterious functions of which must be taken into consideration by the physician.

Acidemia

Acidemia is a condition found in many chronic diseases, and it finds expression in various ways, all indicative of imperfect digestive processes, faulty metabolism, and incomplete elimination. This condition is caused primarily, in many instances, by hepatic insufficiency, intestinal stasis, and toxemia. According to Harrower, who, in an article on acidemia and autointoxication, has lucidly described this condition, the first evidence of acidemia is usually a feeling of dulness or laziness, with an occasional headache. The individual complains probably of "not feeling well." He is, of course, not yet sufficiently inconvenienced to consult a physician, and, so, the condition is allowed gradually to become worse. The bowels are always quite irregular in action, at times moving too freely and again being moderately constipated. Later, the breath becomes foul, the tongue, coated, the stools, bad-smelling, often having an offensive, putrid odor, and in many patients dark rings form under the eyes.

The effect upon the temper is often marked, and persons previously kind, affable, and agreeable become morose and show "streaks" of ill-temper and rudeness. The mind is not as clear as before, and the afflicted individual often finds it hard to recall names or dates that were formerly quite familiar. Occasional pains are felt in various parts of the body, usually varying quite a good deal in severity and persistence. These may be ascribed to "a touch of rheumatism" or to

"just a little cold," and are naturally treated in a haphazard manner, but with little or no lasting results.

Things go on from bad to worse until some neuralgia, arthralgia or other acutely painful condition causes the sufferer to demand the physician's attention. Even should the patient be fortunate enough to be subjected to a thorough physical examination, no serious conditions will be brought to light, unless some other disease-process is also present. He receives, as a rule, a more or less brisk cathartic, but otherwise is reassured by the usual "You'll be all right in a day or two."

If, however, the urine should be examined, several important departures from the normal will be discovered. The amount is usually diminished, the total acidity is found to be very high and the total solids low. The acidity shows an increase above the normal of 35 to 40 or even 100 percent. The test for indican rarely fails to establish its presence.

The routine cathartic course given serves, of course, to remove from the bowels large amounts of stagnant, putrefying material, and, at least temporarily, the patient is made to feel "better." However, if the cause of the trouble is allowed to persist, the previous conditions soon return and the patient grows steadily worse. The stomach gets out of order, the appetite fails, and the mouth condition often becomes serious. Teeth decay rapidly, not from lack of care, but from the acid saliva that is invariably present. Neurasthenia, mental irritability, the "blues," insomnia, neuritis, neuralgia, dyspepsia, and a large number of other disease-manifestations are often encountered, and the patient is liable to become sooner or later a nervous wreck. In this condition, he goes from one physician's office to another, without obtaining any permanent benefit. At times, he feels a little better, then, again, he is much worse, until at last he falls an easy victim to some serious disease, such as pneumonia, typhoid fever or tuberculosis.

Importance of the Urine Examination

From the foregoing, it is evident that it is advisable in all cases to make a urinary analysis. Leube has well said: "I would advise particularly never to omit the examination of the urine in cases of headache, even if it is of purely intermittent character. We shall thus avoid subsequent self-reproaches."

The laboratory report will give definite grounds for initial rational treatment, while the subsequent urinary examinations will show the effects of the treatment. The saliva, too,

should be tested with blue litmus-paper—a very easy procedure of considerable value, which should be carried out much more frequently in the routine of office or bedside consultations. The administration of laxative salines, suitable hepatic stimulants, and antacid remedies for an extended time—to be governed by the influence upon the urinary and salivary acidity—will in time regulate matters more satisfactorily.

Intestinal antiseptics, such as beta-naphthol, the sulphocarbulates, and other similar substances, are of great assistance in reducing bowel putrefaction. The proteid rations should be materially reduced, especially the more easily putrefying meats.

Most authorities deny that acidemia and autointoxication are diseases in themselves; and this is doubtless true. Both conditions are a serious menace to the individual, in that they lower the general vital resistance, rendering the subject more susceptible to every kind of disease, infectious or otherwise. The danger from these conditions is in direct proportion to their insidious onset. They should always be thought of when patients come complaining of obscure ailments; while they are easily detected if only the physician will give the proper weight to the laboratory findings and makes it a routine practice either to examine the secretions for himself or else have it done for him by some competent laboratory-expert.

Digestive Principles

Pepsin, an unorganized ferment excreted by the follicles of the stomach, is a powerful digestant of all proteid substances. Pancreatin, another albumin-digesting ferment, is formed by the pancreas and possesses notable digestive powers. Ptyalin, useful for converting starch into sugar, is a ferment present in saliva. These valuable ferments are excretions, in that they are cast out of a part of the organism, while at the same time they promote digestion by their action on the food-material. An animal-principle closely resembling albumin is contained in all the gastric, pancreatic and salivary fluids; a principle which appears to be in a constant state of change or incipient decomposition; and this very condition, if it be thus, makes the albuminous matter important in promoting solution of aliments, but at the same time renders it unfit for retention in the circulation.

Our body-heat has its source in the lactic acid of the lactate of sodium. This is derived from glycogen stored up in our livers, where

it is converted into sugar, thereafter to be broken up into the lactic acid mentioned; which then, uniting with the sodium of the blood, becomes slowly oxidized. The production of too much waste matter by the overactivity of these ferments is a phenomenon just beginning to attract the serious attention of clinicians, and there is every reason to believe that much good may come from a study of this problem.

Down along the gastrointestinal canal various excrementitious activities take place which result in numerous recrementitious albuminous products, and these are very helpful to food elaboration. Primarily divergent from each other, in themselves they possess considerable action in common. In other words, the primitive tegument along the digestive tract has gone through such changes that it now excretes, or secretes, various products which assist the process of assimilation while it gives out other products which, when the system is charged with them, are too far advanced to have any nutritive force, being, in fact, active poisons.

As is well known, the intestine, in addition to its other functions, eliminates a number of substances from the body-fluids, notably iron, phosphorus, calcium, and others, in the form of organic salts. It also secretes, in less measure, nitrogen and fatty, or fat-like substances.

The doctrine of intestinal autointoxication was promulgated by Bouchard and elaborated by his followers. It is a familiar fact that the intestine is the sole internal organ in which, from the day after birth onward, bacterial decomposition occurs continuously without necessarily injuring the body. Indeed, bacterial action is believed by many to be necessary for the correct functioning of the intestine. The chemical processes in the decomposition of the chyme consist in fermentation of the carbohydrates, putrefaction of the protein, and conversion of the fats into the lower fatty acids. Of all these, the last mentioned is of least importance.

It is in the colon and in the lower part of the small intestine that, normally, *fermentation of carbohydrates occurs*. On the other hand, *putrefaction of protein* takes place only in the large intestine. A rigid line of demarcation is formed by the ileocecal valve, above which putrefaction never sets in, except under pathologic conditions. In the cecum and ascending colon, the two seats of most active decomposition, both putrefaction and fermentation come together; the latter afterward predominates over the former to de-

crease again in the last portion of the colon, where the feces become inspissated. It follows that the fecal bacteria, which flourish abundantly in the cecum, gradually decrease in numbers further down.

The products of fermentation are: gases, volatile fatty acids and lactic acid; and, for the most part, these are absorbed by the intestinal wall. The gases become again excreted with the air expired by the lungs, in breathing. The fatty acids are either expired or eliminated unchanged in the urine or become oxidized. Those products of

fermentation that do not become absorbed are excreted, either as flatus or along with the feces. Putrefaction of protein produces ammonia, sulphureted hydrogen, and other gases; as well as several characteristic bodies, such as aromatic oxy-acids, phenol, indol, skatol. These latter also are absorbed by the intestinal wall, while the gases are expired. The other substances either remain, to a variable extent, in the feces or are excreted in the urine as compounds of sulphuric or glycuronic acid.

[To be continued.]

Bacillus-Coli Cystitis, and Its Successful Treatment

By J. FAVIL BIEHN, M. D., Chicago, Illinois

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THE colon group of microorganisms is responsible for ninety percent of all cases of cystitis. In children, the percentage is even greater than this.

The disease manifests itself in various degrees of severity, the mildest form being practically nothing more than a bacteriuria. In such cases, there is frequent urination, and the urine shows a granular cloudiness, is acid in reaction, and contains very few cells, but a large amount of mucus. Albumin may be absent, or if present there is a slight trace only. Such cases are very frequent. They may last a week or several months and terminate in spontaneous cure or gradually become more and more severe—at least severe enough for the patient to consult a physician.

Variations of Type

From this mild type, there are all gradations up to the most severe form, in which there is frequent, painful urination, tenesmus, slight fever, many pus cells, usually a few red blood corpuscles, and albumin in the urine. The urine is of acid reaction, although at times this acidity may be very slight. These severe cases usually show an extension of the disease to other portions of the urinary tract—that is, an ascending infection, the ureters and finally the pelvis or the kidney itself becoming infected. Not infrequently one sees cases of the severe type of cystitis beginning as a renal infection. The symptoms are the same whether the disease originates as a cystitis and there is an ascend-

ing infection, or whether infection begins primarily in the kidney itself. As already stated, there are irregularly occurring colicky pains and renal tenderness, while albumin, red blood-corpuscles and pus are found in the urine. There is an accompanying fever of an irregular, intermittent type, resembling very much that of malaria. These cases may develop a septicemia due to the colon bacillus.

Conditions That Predispose to Colon Cystitis

There is always a predisposing pathologic condition, general or local. More often this is local, that is, located in the urinary tract. Upon investigation we find a history of urinary retention, urethral stricture, enlarged prostate, chronic endometritis. Less frequently there is some insidious systemic disease.

This form of cystitis is very common in women and in practically all cases there can be obtained a definite history of severe chronic constipation. As a matter of fact, the real cause of the infection is believed by many to be found in the natural tendency of the kidneys to separate living bacteria from the blood stream and excrete them by the urine, normally without harm to urinary tract. We know definitely that this occurs, because, in various infections in which bacteria are present in the blood, the bacteria are found in the urine: typhoid bacilli in typhoid-fever; pneumococci in pneumonia; streptococci in rheumatism; and so on. Further, it is believed by some that colon bacilli are constantly passing the intestinal

mucosa, gaining entrance to the blood stream from which they are eliminated by the kidneys, and, as many observers claim, without a demonstrable intestinal lesion. The disease may also result from extension (more frequently, I believe, in women) from a peritonitis or peritoneal inflammation. It was formerly thought that appendicitis and peritonitis were essentially colon-bacillus infections, but that mistaken opinion is now known to have been due to faulty methods of culturing, the colon bacilli overgrowing the streptococci, which are the essential organism in these infections; rarely is the concomitant causative organism a staphylococcus or a pneumococcus.

The Distinctive Features of the Colon Bacillus

The colon bacillus appears in the urine usually as a diplobacillus. These organisms are found partly in long threads, but usually are short, like cocci, and in a freshly voided urine are not very motile. The urine is practically always acid, but the simple fact that the urine is acid does not justify one in assuming that the cystitis is due to the bacillus coli; other organisms may be found and it is always essential to make at least a microscopic examination preferably using Gram's stain.

The patient's serum usually will agglutinate the organism in a dilution of 1 to 20 or 1 to 50. In fact, natural agglutinins for bacillus coli are commonly present in normal sera; frequently, however, in slight cases, the patient's serum will not agglutinate the organism in a dilution of 1 to 50.

Bacterin Treatment of Chronic Cases

The chronic type of the disease is practically always markedly benefited by bacterins, although occasionally there occurs a case in which one or two injections will rapidly reduce the temperature to normal, all local symptoms disappearing at the same time. However, in my experience, a complete clearing-up of the bacteriuria is impossible by means of bacterins alone, and a few pus corpuscles will be left in the urine.

Nevertheless, in these chronic cases, the bacterin alone produces very marked benefit. I have yet to see a case that, so far as the patient's subjective symptoms were concerned, was not cured clinically.

Relapses are not common. Seven cases of the chronic type in women (one of five years standing), with frequently-occurring exacerbations, especially during the winter months, have now been completely free, symptomati-

cally, from this disease, two years after a course of bacterin treatment, although in two of them a few pus corpuscles, with an irregularly occurring bacteriuria, without clinical symptoms, still persist.

Results Obtained in Acute Cases

In acute cases, the results are usually not so striking with bacterin treatment alone. These cases always require the use of some urinary antiseptic, preferably hexamethylenamine, combined with acid sodium phosphate to increase urinary acidity, and careful attention to the general and especially to the gastrointestinal condition. However, if ten or twelve doses of the proper bacterin be given (by this I mean comparatively large doses at four-day intervals), and the desired result is not obtained, then we know the predisposing cause, that is the local or general pathologic condition as a result of which cystitis has occurred, has not been removed, be this a general, genitourinary or gastrointestinal condition. It is essential in these cases to determine the presence or absence of some surgical condition, such as polypi, strictures, and the like.

Two Interesting Cases

During the last year, two exceedingly interesting cases of colon-bacillus infection of the bladder have come to my hands:

The first patient was a man, forty-six years of age, operated on in February, suprapubic incision being made for the removal of a vesical calculus. Recovery was uneventful, except for a slight fistula. This fistula, however, persisted in spite of the ordinary treatment for some three months, at which time he was referred to me. Examination revealed a small fistulous opening at about the median point of the incision, from which was passed a few drops of urine, practically only during the time of urination, and rarely more than a half dram at a time. The urine was acid in reaction, contained considerable pus, much mucus, many colon bacilli, very few red blood corpuscles, a slight trace of albumin, a large amount of indican, and no casts.

An autogenous bacterin was prepared from the patient's urine, and administered at four-day intervals, 100,000,000 dead organisms at the first dose, increased 100,000,000 at each successive dose. He was likewise given hexamethylenamine and acid sodium phosphate, 10 grains of each three times a day, and bacillus-bulgaricus bouillon. The fistula closed rapidly, and at

the end of three weeks there was no apparent evidence of the fistulous opening except a very slight reddening of the scar. Some six weeks later, however, there reappeared a small superficial abscess at the site of the fistula. It had no connection, however, with the bladder, and two additional doses of bacterins, 400,000,000 bacteria in each, produced its disappearance.

The second patient was a physician, age 64. He had suffered from a hypertrophied prostate with occasional retention requiring catheterization; constant bacteriuria, finally complete retention. A suprapubic prostatectomy was performed, and for three weeks, following operation, in spite of the usual antiseptic treatment, a violent cystitis was present. This patient was given an autogenous bacterin, 25,000,000 microorganisms, daily for six doses, then 300,000,000 every four days for five doses, at which time the fistula closed. This patient, in order, as he himself stated, "to make doubly sure of a cure," took himself approximately 2,000,000,000 colon bacilli. This produced severe prostration, lasting for some ten or twelve hours; in fact, it was so severe that he was unable to stand, but the following day, as he expressed it, there was no evidence of toxemia or depression. This was the only reaction to the bacterin that he manifested, the previous doses producing only a very slight discomfort.

Chronic Cystitis in a Woman

Another interesting case was that of Mrs. S., age 39, who suffered from acute exacerbations of a chronic cystitis and bacteriuria, following slight acute exacerbations of a chronic appendicitis for three years. At no time, until the last attack, did the cystitis persist for more than five days. The patient suffers from chronic constipation and when this becomes particularly marked, she says she has a "bilious attack," in which

there is inhibition of digestion, fermentation of gastric contents, with severe headache, followed by an attack of vomiting, later some diarrhea, and then evidence of cystitis. Usually at the time she complains of diarrhea there is slight pain in the region of the appendix. She refused operation.

A thorough course of catharsis, followed by an autogenous bacterin and bacillus-bulgarius buttermilk, as a sole diet, in twelve days cleared up the condition completely—at least symptomatically. The return to a normal diet, however, resulted in a marked rise of temperature (102.8° F), tenderness in the region of the appendix and six hours later, tenesmus and frequent urination, with but a slight increase in the number of pus corpuscles in the urine.

A return to the buttermilk diet and four additional doses of bacterin, followed by a gradual return to normal diet, in one month has produced a clinical cure, without relapse, although there is still an intermittent bacteriuria.

An examination of this patient's urine, from which the bacterin was made, showed a large number of pus corpuscles, and many colon bacilli, mostly small diplococcus-like forms that proved to be bacillus coli communior. An examination of the urine immediately following the relapse showed very few corpuscles and many clumps of bacilli, swollen and agglutinated, giving an appearance such as one sees under the microscope in a positive Widal reaction. These clumps of bacilli could be seen with the naked eye, and they did not tend to break up, although the urine was observed for forty-eight hours at room temperature. This patient's serum now, some nine months after bacterin treatment, agglutinates this particular strain of bacillus coli communior in a dilution of 1:1200.

[To be continued]

WHOEVER could make two ears of corn or two blades of grass to grow upon a spot where only one grew before, would deserve better of mankind than the whole race of politicians put together.—Jonathan Swift.

Corporation Surgery

How the "Company Doctor" Handles Emergency Work

By SAMUEL C. BEACH, M. D., Chicago, Illinois

III. RAILWAY SURGERY

IN VIEW of the large number of accidents occurring on railways, both to employees and passengers, the position of the surgeon to the railway-corporation becomes one of great importance, and, in proportion, the means devised for the ready care of this class of injuries have, of late years, necessarily improved. The great advances in surgery have been utilized to the utmost advantage in the treatment of railway emergency-cases, and methods in vogue but a short time ago are being improved and practicalized year after year, until today, through organization and first-aid lectures to employees, the United States has a system of railway surgery that it may well be proud of, as evidenced by that very practical proof—decreased mortality.

The Past and the Present

From the beginning, in earlier days, it has been realized that the treatment of these cases has been hampered by lack of facilities, wrecks apparently choosing to occur always at a point situated the farthest away from any possible aid of a professional nature and thus necessitating long delays before the surgeon could be conveyed to the victims. Then, when the surgeon had arrived, there would be little or nothing to work with, his dressing-materials being limited to a few bandages, a small quantity of gauze, and such instruments as had been hastily snatched up on leaving the office.

The organization of the road was not then what it is now; the equipment was vastly inferior, there was no track elevation, the road-bed was poor, which, with curves and reverse curves, made wrecks more frequent, while the class of trainmen then existing were not as well trained and skilful as they are at the present day. Moreover, the country was not as thickly settled as now and stations were farther apart, making difficult the problem of securing immediate first aid, one of the fortunate uninjured oftentimes being the only means of sending out for help, and then frequently only by the tedious process of a long walk back to the nearest station.

However, "necessity is the mother of invention," and it did not take the officials long to realize that this problem must be

solved, and, applying their active brain-power to its solution, we have now a splendid system in the hands of a trained and well-equipped force, which is carrying out the details of the work in such a manner as materially to reduce the mortality of railway casualties by an appreciable amount.

Fewer Casualties Among Employees—More Among Trespassers

It is gratifying to find that the percentage of deaths and injuries among those employed on the road has been reduced by something over 50 percent, the greater number of accidents happening to a particular class of which more will be written later. Although the number of casualties among the employees has been decreased, the total number of accidents for the year has actually been increased; which statement sounds mystifying, until it is explained that by far the greater number of unfortunates are to be found among a class of careless, unthinking people known as trespassers, whose existence is the bane of the careful railwayman, who already has enough to attend to in the discharge of his official duties to his road and, yet, is called upon to watch the track constantly for men, women, and children who make it a public highway or even a playground.

Much money, the combined planning of master minds in railroad affairs, as well as countless devices for warning the general public against trespassing, has been wasted in an almost fruitless attempt to keep people off the right of way; but, until legislative measures are passed, providing for fines and penalties for this class of offenders, the hoped-for results can never be attained. Even where such laws have been made, they are seldom enforced; so, year after year, the evil continues. The only encouraging fact to be mentioned is, that at least a start has been made to abolish this trouble, which should, by all means, be wiped out.

A glance at the statistics of railway accidents may prove interesting as well as instructive, and so will be inserted here: In the year 1914, out of 265 passengers killed, only 85 were killed in train wrecks; leaving a remaining 180 who lost their lives falling from trains in yards, getting on or off cars

in motion and being struck by passing trains. Among employees, it has been found that only one man out of every 172 was killed—certainly an enlightening statement and showing the care which is being exercised by officials. As significant as are these facts, the deduction can be made still more plain. During the same period of time, 5471 persons were killed and 6354 were injured while *trespassing* on the right of way. Think of it, 32 men, women, and children killed or injured *every day* while they were trespassing on property which is fenced off, placarded by day and danger-lighted by night, watched and guarded by every conceivable plan just for the purpose of preventing this very danger.

Yes, you are right, the preponderance of the blame lies with the public; and here is where you and I, humble private practitioners though we be, can do much good by warning our patients and our patients' children of the danger incurred by trespassing on railway property; nay, more, by setting them a good example.

First Aid to the Wreck Victims

The plans adopted by different roads differ somewhat, and it might not be amiss to explain briefly what these differences are, though the results are all productive of the same excellent effect in decreasing mortality and likewise, by competitive stimulation, in increasing efficiency.

The formation of a surgical staff for a railway system should start with the appointment of a chief surgeon, whose duties not only would be professional, but executive as well. He has the complete supervision of the surgical work of the entire road and is in authority over the division surgeons, who are stationed at each division point, having charge of from 200 to 400 miles of territory each. These division surgeons are appointed by the chief surgeon from men of proven ability in their community and are usually recompensed in such a manner as to enable them to devote their entire time to the work in hand, only seeing private patients in their offices and not making any outside calls. Many roads require physical examination of their employees, also a record of time off for sickness, as well as accident; and the discharge of all these duties will usually occupy the surgeon's entire time.

When the particular division is in a thinly settled section of country, it is customary for the division surgeon to go to the scene of the accident and bring the injured person or persons to the nearest point where proper

care and attention can be given. Should the division be in a well-settled part of the country, it is often possible to have some local surgeon (with whom such an arrangement has been previously made) care for the case until the division surgeon arrives, whereupon the patient is immediately placed under the latter's care.

The nearness of a properly equipped hospital will often affect the above arrangement, and the general subject of railway-hospitals will be discussed later in the paper; the various roads differing somewhat in their views on this subject.

Taking Care of Wreck Victims

When a wreck occurs—and it would seem that it usually happens at some point midway between stations—the nearest division surgeon is called out and hurried to the scene on the relief-train; which latter consists of the giant wrecking crane, block cars, one or two sleepers or day-coaches, a full line of surgical supplies, besides such additional surgeons as the division surgeon may deem necessary to call upon, according to the circumstances.

Immediately upon arriving, a headquarters for the accommodation of the injured persons is selected, and this may be a nearby house or shed, an empty coach (sleeper preferred, though a day-coach may be made to do by turning back alternate seat-backs and placing the cushions longitudinally), or, finally, if none of these are available, the floor of a box-car on which hay or straw covered with blankets has been laid.

The helping surgeons are paired off as first-aid men and instructed to receive and give immediate surgical care to the injured, *as they are taken from the wreck*; also instructing the stretcher-bearers where to carry their burdens. The dead are conveyed to some separate point close at hand and, covered with blankets, placed under one man guard. The workers, provided with proper tools, lift the wreckage just high enough to release the body of any victim, who is then drawn carefully out. The first-aid surgeons are close at hand to receive the patient, examine the general condition and ascertain the extent and severity of the wounds; stimulants are given and the wounds receive first-aid dressing. Especial care and attention is paid always to hemorrhage control, using for this purpose either the elastic constrictor, although better, if the bleeding points can be readily found, the artery-forceps. Sterile dressings are then placed in immediate con-

tact with the injured surface, bandages are applied, and the patient is placed upon the stretcher or substitute therefor; the bearers are then instructed where to carry their burden.

It is wonderful how many victims can be cared for in this systematic manner, and with safe speed, too. It will be seen that this plan provides aid as quickly as the victim is released from the wreckage.

The patient is then carried to the division-surgeons' headquarters, where further surgical care, of a more definite and thorough nature, is given; the whole amount of time consumed being only as long as it takes the first-aid dressing to be applied and the patient's being carried to the headquarter location.

The condition is now carefully examined and any emergency-operation determined upon is done. The patient then is placed under the care of the nurse, *in the car* which it is designed will carry the patient to the nearest hospital; the object being to move the injured person as few times as possible.

The Immediate Surgical Care

No operative measures, except such as are imperative and necessary, should be performed at this time, and first-aid surgeons working on the victims as they are removed from the wreckage should be instructed to limit their efforts to covering the wound with simple sterile gauze pads and bandaging firmly in place—this, of course, after stopping hemorrhage.

The point brought out in having the forceps applied for hemorrhage control at this time has been criticized, but no risks should be taken in this matter; and it is certainly more sure to apply the forceps, especially where the bleeding vessel is visible or easily found, than hastily and imperfectly applying a constrictor and having the patient continue slowly to bleed to death. It is not absolutely necessary to tie off the bleeding point, as the forceps can be so applied as afterward to be included in the bandage, thus becoming a landmark for the division surgeon later on, indicating to him his first duty in caring for that particular case.

The injured having been cared for, they are then conveyed to the nearest hospital, there to undergo removal of any unclean and damaged clothing that has not already been removed, their wounds to be redressed if the bandages have become contaminated with blood, and such further operative measures instituted as have been found im-

possible to perform previously. This latter would mean the completion of an amputation for which the snipping off of a nearly severed limb had been done to facilitate transportation, operating for compound depressed fracture of the skull, and other operations of that nature. It should be borne in mind, however, that a compound fracture of a leg or arm, wherever there is the least chance of saving the member, should be carefully cleaned and disinfected at the wreck, making the temporary part of the dressing only the retaining apparatus.

Dislocations may be reduced under an anesthetic, or even without, at the place of accident; simple fractures temporarily splinted; burns given complete dressing, except where cinders and dirt are ground into the wound; suturing for the control of hemorrhage—all these may be done at the wreck; but the surgeon should remember that no time must be wasted, and should delay his *critical* and time-taking operative measures until his patients are in the hospital and all proper facilities are at hand.

Some Forms of Injury

Railway accidents are productive of high mortality, for several reasons. First, the shape of the car-wheel with its projecting flange, this always producing a particularly mutilating form of injury; then the weight of the car superimposed upon the flanged wheel and pressing upon a steel rail; further, the speed of the train, this exerting a terrific force when coming in contact with a train going in the opposite direction; finally, the shock produced by the concomitant horrors of a wreck and the delay in receiving first aid—all these are factors to be taken into consideration.

It is now the plan, carried out by most roads, to instruct their employees in the use of the first-aid outfits carried on each train, and a gratifying decrease in mortality is noticeable as a direct result of this course of instruction. Where formerly the surgeon found wounds covered with dirty dressings, old handkerchiefs, tobacco, and such things, he now finds at least a pad of sterile gauze in contact with the injured part—thus the first and earliest step in the prevention of after-contamination has been attended to.

Two noteworthy peculiarities of railway injuries are the extensive and serious subcutaneous lacerations produced by being caught between the bumpers of the cars; the odd and characteristic feature being that, while the skin is not broken, the muscular

tissue underlying it is extensively torn or crushed. The other is the wholesale stripping or tearing of the skin from the underlying muscular structures, produced by the pinching or constricting lateral force exerted by the wheel pushing the limb along the rail without actually running over it, or by pushing the limb off the rail and pinching a long fold of skin between the flange and the track while the limb lies closely parallel to the rail. These two types of injury should always be dressed without any attempt at suturing, at least for a few days, or until the "limit of virulence" has declared itself.

This open method of treatment is also effective in all injuries where, through any accident contamination, there is any suspicion of infection by the tetanus-bacillus, it being of the anaerobic type and prone to development only when kept away from light and air. The injection of the tetanus-antitoxin, 1500 units, should also be made. First aid of an amateur nature will sometimes use horse-blankets for covering the patient, and these cases should always be thoroughly and carefully cleaned, the wound treated by the open method, and tetanus-antitoxin given.

The first-aid care of hemorrhage is of the utmost importance in railway-cases, and the outfit always contains an elastic constrictor. It is better to apply this as close to the wound as possible and yet feel safe that it will not slip or become displaced; for, any constrictor, where it remains on for any length of time, will produce more or less devitalization of the tissue underneath, while oftentimes the wound is of such a nature that the surgeon must save every inch of skin possible—and any tissue lost from constrictor devitalization becomes a serious affair. It is better to apply the tissue-forceps to the bleeding-vessel wherever practicable and tie off at once, thus avoiding any risk.

If the hemorrhage be from a scalp wound or any place on the trunk, cleaning out the clots and packing the wound with gauze, then applying a firm bandage will usually be sufficient until the case can be permanently cared for.

First Aid in Fractures

In the immobilization of fractures, use any *well-protected*—that is, padded splint or substitute for the same (any board, cane, umbrella). If none such is at hand, tie the injured leg to its fellow, while an injured arm may be bandaged closely to the body.

In cases of compound fracture, take enough time to disinfect thoroughly and carefully,

no matter what other cases have to wait, for the first dressing in these injuries tells the story for the future, so one should be sure that at this first dressing everything possible is done to make the story have a happy ending. Here is where tincture of iodine will do wonders. Use it freely.

When your patient is brought in for permanent dressing, look *first* of all at his general status, and see whether he is in good physical condition, before you even look at the wounds—the people have a deep-rooted prejudice against surgeons whose patients die. Also, the public has a right to be thus prejudiced, and it is only by care and attention to the vital processes and the assurance that they are rightly carried on that the surgeon can help to overcome this feeling.

Hospital Railway Cars

The question of a car fitted especially for the handling of railway-accident cases has been given careful consideration at various times and by various roads, and, while the plan has its advocates and opponents, it has not been universally adopted in this country, neither has it been universally condemned. The cost of preparing such a car would be considerable, probably being from \$15,000 to \$18,000, and when finished and ready for use it would be available possibly on but two divisions of the road, covering a territory of maybe 300 to 400 miles. Thus, to provide for the care of the entire system, would mean building and equipping 20 or 30 of these cars, depending on the size of the road; and this would be exclusive of maintenance and expense of moving. For these reasons, as well as the fact that, when time and speed are the great factors (and it has been estimated no time and speed could be saved by the use of hospital cars), they have not been installed on many roads in the United States.

There are points well worth considering, however, in the fitting up of a car for first aid and to become part of the equipment of the wrecking-train. Such a car could be made from a converted day-coach from which the seats had been removed and an emergency operating-room fitted up in one end by partitioning off about ten feet of space. The remaining space could be utilized as a general ward and its floor-space covered with cots for the reception of injured persons. Ten feet could be partitioned off from the other end of the car for a store-room for surgical supplies, nurse-room, and drugs.

Such a car would not entail a great initial expense, could be used for the surgeon's

office and examining-room for employees, and would at all times be ready to be taken out with the relief-train on short notice. It would serve admirably for the care of accidents happening in the yards, and, in case of a serious accident which required transportation of an injured person to a distant point, could be coupled to the regular train and the case cared for and watched during transit to the better advantage of all concerned. Cases of contagious disease requiring transportation over the division could well be placed in such a car, which could afterward be rendered sterile by thorough fumigation, thus protecting the regular passengers of the road from the danger of infection. The fact that hospital-cars were in use in Germany and Belgium, even before the present war made it necessary, would seem to point to their value and possibly serve to incite us of America to adopt them.

Railway Hospitals

Whether the railway shall own and control its own hospitals depends largely upon the individual past experiences of the chief surgeon, and the road should accept his indicated policy either way. It has been found of the utmost value, however, to have railway-owned and -controlled hospitals, and for many reasons, the chief of which is, that the chief surgeon and the division surgeon under him could have direct supervision of a patient *until complete recovery*—an important factor not only from a physical, but from a legal standpoint as well. It is not to the advantage of the patient to pass from the hands of one surgeon to another, even when they are

equally competent, for experience has proved that the man who has dressed the case first or supervised the dressing should continue in the care of such case until recovery. The first dressing is all-important, and no surgeon likes to wash another's "dirty dishes."

The hospital should be located at the division-point or midway in a division, so as to cover the largest amount of territory and be the more readily accessible. It need not contain more than twelve or fifteen beds. Then, when the patient is very seriously injured, the fact of the hospital being within easy distance will be appreciated by reason of lessened distance for transportation and lessened mortality rate. It is not at all necessary to maintain a larger, or base, hospital, if the chief surgeon uses care in the appointment and selection of his division surgeons—a good man can do more with fewer conveniences than one less skilled with the most complete equipment.

Patients should be kept at the hospital, when possible, until complete recovery has taken place; for, convalescence is always retarded when the patient is allowed to go home—the hospital regime is the best atmosphere for railroad and other industrial cases, not only for physical, but for psychic reasons as well.

It is sometimes found a valuable aid to recovery to establish a convalescent-home adjacent to the hospital, where those patients able to exercise in the open air can be placed for a week or two previous to discharge; the division surgeon thus maintains personal supervision during the entire care of the case—an important factor.

Adventures of a Frontier Doctor

III. A Ride for Life

By CHARLES STUART MOODY, M. D., Hope, Idaho

ABOUT once every six months I forsake my lair in the mountains of Idaho and descend upon a considerable city that lies about a hundred miles to the westward, there to take in the bright lights, renew my allegiance to the God of Healing, and, incidentally, foregather with a pair of professional brethren who are especial "tillicums." In addition to showing me how they do surgery, one or the other of these always takes pity upon my benighted and heathenish condition and invites me for a ride in his high-powered

automobile. Once inside, I recline upon the yielding upholstery of the car and mine ear is made glad by the purr of the powerful machinery, the while the proud owner descants upon the hill-climbing capabilities of his "wonderful" machine. And then I discover that, though the machines are of different make, each of my good friends has the very one best on the market.

I confess, I get a great deal of pleasure out of these rides, all at no cost to myself, what-

ever. In fact, I think, sometimes, that I have rather the best of the bargain—I get the ride, while my friend bears all the expense. As we glide over the smooth pavement, I sometimes half wish that my own professional lines had been in more urban places, where I, too, might own such a car. Then, however, I pause and call to mind a ride I once made on Black Prince, when a life was at stake; and there comes a realization of the limitations of even the most powerful autocar, whereupon my faith in a good, stout riding-horse revives and is made but stronger.

Black Prince

Let me tell you about Black Prince. He wasn't much of a horse to look at—never would have taken a prize at a horse beauty-show, nor was his gait anything to go into rhapsodies over. He was just a long, lanky, scrub horse, half American and half Indian cayuse, black as a coal, save for four white feet and an ugly white blotch (an inheritance from his Indian ancestry) that extended halfway down his long homely face. He had a temper like a mother-in-law; but his stamina was one that would shame a mountain-goat. I bought him from an Indian one day early in the spring, when the poor fellow had not had a decent meal for months and was nothing but a heap of not too animated bones. I didn't ask the Indian where he got the horse; in the first place, I didn't care one way or the other, and, in the next, the redskin would have lied about it anyway. Then, having no immediate use for the horse, I turned him into the pasture with the admonition to go and fill himself up, so that he would not bring upon his master the blush of shame should I ride him.

After two months in the meadow bottom, Black Prince, as I had named him, grew round and sleek, and—mighty mean. The first time I attempted to mount him, there was what we of the West, in our expressive vernacular, speak of as a "circus." As the "circus" went on, that black devil did some tall and lofty bucking, but I succeeded in staying with him and on him, just long enough to enable me to select a reasonably soft place to light upon—then I struck *terra firma*. It took a full month of unwavering patience and kindness to bring his horsemanship back into anything like reasonable docility.

I had owned Black Prince longer than two years and he had carried me over many hundred miles of our rough mountain-trails, when I had occasion to put him to the supreme test. That test he stood nobly,

but after that he was but a wreck of his former self. So, I pensioned him off, and he spent the last years of his life on an upland meadow, being cared for in that manner that we humans think is best suited to animals of his kind.

How the Accident Occured

The thing came about in this wise:

A party of wealthy easterners—consisting of father, mother, grown daughter, and two sons, aged 12 and 14, respectively—were making an extended camping trip through the Bitter Root Mountains; their packing trip to start at the eastern slope of the mountains and terminating at Lewiston, Idaho, on the western border. They were under the guidance of my friend Lew Roberts, who had met them with the pack-train at Stevensville, Montana, early in July. At the time of which I speak, the party was encamped at Jerry Johnson's Hot Springs, on the Lochsa fork of the Clearwater River. There is a thermal spring at this place which is reputed to possess certain medicinal properties and is quite a favorite camping-place, and this party contemplated remaining there for several weeks. Jerry Johnson's cabin is (or was) the only human habitation within hundreds of miles—the only house in a large intermountain region greater in extent than the state of Vermont. It was an ideal place to make a camp. A broad grass-covered meadow stretches out in front of the cabin, behind tower the cloud-capped summits of the Bitter Roots, below flows the crystal-clear river that teems with great trout, the hills are replete with game, and acres upon acres of luscious berries grow on the foothills in their season.

A Hurry Call Into the Mountains

It was late in July and I was sitting in my office, half-dozing over a magazine, when a horseman came dashing up, his mount covered with foam. It was my friend Roberts. He reeled into my office half-dead from fatigue.

"For God's sake, Doctor," he exclaimed, "get your horse and beat it to the Lochsa, one of the boys has been shot."

"Where? How?" I questioned.

"He's shot in the stomach. I don't know how it happened. I had been out picketing the horses, when they told me, and I saddled Ranger and came. The boy was alive when I left, that is all I can tell you."

"Where are they?"

"At Jerry Johnson's cabin."

I had not been idle while I was questioning Roberts, but was busy throwing things into an emergency-case.

In fifteen minutes from the time Roberts rode up to my door, I was mounted on Black Prince headed for the Lochsa.

Now, I wish you would get a good map of Idaho and locate the town of Orofino on the Clearwater, then follow eastward until you find Jerry Johnson's Warm Springs on the Lochsa. It is sixty miles as the crow flies, but more than twice that distance as the trail runs. One hundred and thirty miles of mountain fastness untraversed by any road; nothing but a dim mountain-trail traveled by the Indians and the few whites who dare to penetrate the country in search of game or gold. It is a region overgrown with gigantic firs and pines and cut by immense ravines through which torrents pour, and the bald ridges capped by towering cliffs of dark basaltic rocks reaching up to the very clouds.

I Start on the Long Ride

It was two o'clock in the afternoon when I started. Sunset found me at Hartmann's on the Musselshell River, the last white habitation that I should encounter. Here I halted for a few minutes, drank a glass of milk and allowed Black Prince to breathe. As the shadows of night drew on, I mounted and set out once more. Fortunately I knew every foot of the trail, night or day, and darkness was no bar to my wild ride. Black Prince took the trail across the Musselshell meadows at a swinging lope and breasted the mountain on the opposite side at his long swinging trot.

All night the noble horse kept up his gait and daybreak saw me at the Indian Post Office, the highest point on the trail. As the sun rose, I looked down far below upon the winding Lochsa, a mere thread of silver in the dark-green of the conifers, miles and miles away. Do not imagine that because I could almost see the tents of the encampment I was near to my destination. You do not know western trails. Many weary miles yet lay between me and my patient, and Black Prince was beginning to grow weary; his sides were heaving, his head hung down, his ears no longer pointed keenly forward, but sagged from fatigue. Yet, the brave fellow kept doggedly on, with the same ceaseless swinging trot. The descending trail wound down the steep mountainside, in and out among the boulders, turning and twisting upon itself like the folds of some

gigantic serpent. It was past midday when I reached the Lochsa and forded that stream. Only six miles more. But those six miles were the longest of the entire journey. I did not dare to urge the animal, which was now reeling as it walked.

And now I kept asking myself, what shall I find when I reach the camp. You well know the lack of accuracy of a layman with regard to anatomical locations. Roberts had said that the boy had been shot in the stomach. I was experienced enough to know that this description was rather indefinite. The wound might be anywhere from the symphysis to the ensiform cartilage and still be within the confines of the "stomach" as understood by Roberts.

I Reach the Camp at Last

At length the white tents gleamed through the dark foliage of the pines, and as I rode into camp I was dead-tired and sore from the long sojourn in the saddle. As I rode up, the father met me.

"Is he still alive?" I asked.

"Yes, doctor, thank God."

Entering the tent where the wounded boy lay, though weary and exhausted, I made a hasty examination, for I felt that there was no time to be lost. The little fellow was quite cheerful and smiled up at me as I knelt beside his couch. I found his temperature normal, circulation and respiration good, a little tenderness over the entire abdomen, and ascertained that it was a penetrating wound, on a level with and just to the left of the umbilicus. I then elicited the following peculiar history. The two boys had bored a hole in a small spruce-tree, with a bit, about three feet up, and into the hole they had then inserted a loaded rifle-cartridge. Using this cartridge for a target, they began firing at it with a small-calibred rifle. After several shots the younger one made a center shot, this exploded the cartridge in the tree, when the shell blowing out, struck the youthful marksman in the abdomen, where it buried itself.

Improvising a sterilizer out of a five-gallon oil-can, I soon had instruments, towels, and dressings cooking over an open fire. After scouring the cooking-vessels with sand and soap, I felt safe in boiling water in them. I found the young lady of the family a very intelligent and cool-headed young woman, and, so, pressed her into service as assistant. In an hour everything was ready and the young fellow anxious to take the anesthetic, "to see how it felt." In a few minutes he

was in the land of dreams. I proceeded to bare the abdomen, scrubbed this as well as possible, made a 2-inch incision, and located the empty cartridge-shell and removed it with a pair of hemostats. A large quantity of pus followed. I then washed out the pus-sac, gathered up the shreds of shirt that had been driven into the cavity along with the cartridge-shell, and found that nature had effectually walled off the cavity and that the pocket of pus was all that had resulted

from the accident. I packed the pus cavity with iodoform-gauze, than asked for something to eat.

Leaving the older sister to watch at the bedside, I fell asleep and knew no more until the following day. The youngster was lustily yelling for something to eat, and in a few days he was all right again.

Incidentally, the check which the father sent me in due time was the largest fee I ever received for my services.

Vaccine and Serum Therapy in Everyday Practice

II. Theory and Rationale of Vaccine Therapy (Continued)

By W. C. WOLVERTON, M. D., Linton, North Dakota

The Opsonic Index

IN THE early days of bacterin-therapy, every writer on the subject laid great stress upon the supposed necessity of determining the opsonic index, both before and after the administration of each dose of the bacterin. A vast amount has been written about the opsonic index, nevertheless—although we now know that the value as a guide to correct dosage and interval between doses was greatly overrated—an explanation of what is meant by the “opsonic index” may not be out of place at this juncture.

Leukocytes (“white” blood-corpuscles) are separated from freshly drawn blood by means of centrifugation, and these are repeatedly washed, in order to free them from serum. Next they are mixed with measured quantities of the patient’s blood-serum and a fresh living culture of the variety of pathogenic bacteria known to be, or suspected of being, the infective agent responsible for the patient’s ailment. This mixture is sealed in a small glass tube and incubated for fifteen minutes at 37° C. The closed ends of the tubes are now broken and microscope-slides are “spread” or “smeared” with some of the contents of the tube. The “spread” preparation is stained with suitable aniline-dyes and examined under the high power of the microscope. At the same time that the opsonic estimation is being made with the patient’s serum, another is made, like it in every particular, except that the blood-serum used is taken from a “normal” individual, or, better, the “pooled” serum obtained from a number of supposedly “normal” indi-

viduals. The term “normal” is used advisedly, for the obvious reason that we have all, at various times in our experience, been infected with many varieties of bacteria. However, to obtain the “pooled” serum, it is taken from persons who have not for some time past suffered nor at the time are suffering from the particular variety of infection which the patient is presumed to have. The mixture containing the pooled serum is used for “control” tests and as a standard for comparison.

Upon examination of the spreads under the high power of the microscope, it is seen that the leukocytes, or at least the polymorphonuclear variety of leukocytes, have, during the incubating process, ingested a variable number of bacteria. An accurate count if made of the number of bacteria contained in each of a large number of leukocytes, and an average is struck. This determination of the average number of bacteria in each leukocyte is made in the case of the mixture containing the patient’s serum, and also in that containing the pooled serum. As a basis upon which to estimate the opsonic index of the patient, the index of the “normal” persons from which the “pooled” serum was obtained is taken as 1.0.

Now, assuming that the average number of bacteria ingested by the leukocytes incubated with the pooled serum is 12, and that each leukocyte incubated with the patient’s serum took up, on the average, only 9 bacteria, then the patient’s opsonic index would be 9-12, or 0.75. If, however, the average number of bacteria ingested by the leuko-

cytes incubated with the patient's serum proved to be 18, then the patient's opsonic index would be 18-12, or 1.50.

Now, from inspection of the foregoing, it can readily be surmised that a determination of the opsonic index requires a great deal of time, the strictest attention to technic, and considerable apparatus; and even in the hands of experts in laboratory-work the results gave such wide variations as to make the opsonic index a very questionable guide upon which to base dosage, interval, and other factors. Most happily, however, it was soon discovered that the clinical symptoms alone furnished a very reliable guide; in many cases, indeed, much more so than did the cumbersome opsonic-index determination. So, the *first bugaboo* of bacterin-therapy was disposed of.

Varying Manifestations of the Opsonic Index

Before leaving the subject of the opsonic index, it would be well to say a few words as to its behavior in health and in infections. Take the case of a patient having furunculosis.

While the infection has the upper hand in the fight, showing a condition of lessened resistance of the patient's tissues, the opsonic index will be found to be pretty constantly below normal, say, from 0.4 or 0.5 up to 0.7 or 0.8. This falling of the opsonic index below normal is known as the "negative phase," of which we shall speak more fully a little later. When, subsequently, the immunizing mechanism of the body gains the mastery of the invading bacteria, it will be found that the opsonic index is rising, until it reaches or exceeds the normal index as represented by 1.0.

When a proper-sized dose of a bacterin is administered—assuming the opsonic index to be normal or below normal—there at first ensues a brief negative phase; in other words, the index falls for a period lasting from a few hours to several days. Following this negative phase, the index rises to a point considerably higher than the original level. This second phenomenon is known as the positive phase, and this lasts a variable length of time, usually several days; then it tends to return to or below normal, this fall being coincident to a using-up of the antibodies or immune-substances formed in response to the injection of the bacterin.

It must be remembered that the time for a second dose, and succeeding ones, of a bacterin is before the positive phase has

entirely worn off. By observing this rule, a "cumulation," or a piling-up of one positive phase upon another, may be obtained. On the other hand, after the administration of a suitable dose of a bacterin, a second dose must not be given while the negative phase is on, nor before the positive phase has supervened; for, if this admonition be disregarded, an exaggerated and prolonged negative phase may be produced, to the decided detriment of the patient.

Hence, until one becomes experienced in the use of the bacterins, it is well to administer only a small dose at first: then, at the end of twenty-four or forty-eight hours, if there is no well-marked positive phase and at the same time no noticeable negative phase, the dose should be repeated, in somewhat increased sizes.

The *negative phase* was the second bugaboo which deterred the general run of medical practitioners from employing the bacterins. The danger of an excessive negative phase was dwelt upon at about the same time that the necessity of frequent determinations of the opsonic index was being insisted upon. Now, however, when the bacterins have been in steadily increasing use for over fifteen years, the dosage has been pretty well worked out.

The bacterin containers, as they come from the laboratories, usually have the maximum and minimum dosage printed on the label, along with the number of millions of killed bacteria per cubic centimeter. Consequently there is now very little chance of producing a harmful negative phase as the result of an overdose of a bacterin. If bacterins are administered in anything resembling reasonable dosage, no harm will result.

To illustrate this point, I quote Dr. Timothy Leary, of Boston: "In general infections, vaccines [bacterins.—W. C. W.] are harmless. This was indicated in a case in which, through error, 10 Cc. of staphylococcus aureus vaccine containing 10,000,000,000 organisms was injected, at one time, as an initial dose. No harm resulted. In a second case, the same dose produced temporarily a collapse, with prompt response to heat and stimulation." One can easily imagine what would be the outcome if such a mistake were made in the size of a dose of a gelenical preparation of aconite, digitalis, belladonna or any other of the powerful vegetable drugs or their active principles. I can truthfully say that, after an almost daily use of the bacterins during the past five years I have never seen a *harm-*

ul negative phase produced by a dose of a bacterin

And, so, the second bogeyman is disposed of. The dosage of bacterins is no harder to master than is that of drugs; in fact, it is easier, for, the dosage of the bacterins is nearly always printed on the container.

The Preparation of Bacterins

The first step in the preparation of a bacterin is, to procure the infecting organism or organisms in pure culture—that is, unmixed with other varieties of bacteria. This is work for an expert bacteriologist, hence, we will not enter into details as to how this is accomplished.

In the case of an "autogenous" bacterin, the causative germs are obtained from the lesions of the patient himself. In the preparation of "stock" bacterins, the pathogenic bacteria of a given variety are obtained from a number of different sources, the resulting bacterin being "polyvalent," that is, it contains several (usually about a dozen) *different strains* of the *same variety* of bacteria. The "autogenous" bacterin contains but a single strain, the same as that which is responsible for the patient's disease.

Slant tubes of solid culture-media are inoculated with the microorganism from which the bacterin is to be prepared and are then incubated, usually for twenty-four hours. The growth is then washed off with sterile physiologic salt solution and the emulsion well shaken, so as to break up any masses of bacteria. A definite quantity of the emulsion of bacteria and saline solution is now examined under the microscope and

the number of bacteria to each cubic centimeter is estimated.

This counting is done in various ways, usually either by direct count, using the common erythrocyte counting-apparatus, or after the method of Wright. In this latter method, equal quantities of freshly drawn blood, bacterial emulsion, and sterile salt solution are thoroughly mixed together. A spread preparation of the mixture is then made upon a microscope-slide, dried, fixed, and stained. The number of bacteria and the number of red corpuscles in a given field are then counted; several fields being counted and an average obtained both for the bacteria and the corpuscles. The number of red corpuscles in a cubic millimeter of blood being known, it is a simple problem in proportion to determine the number of bacteria in a like quantity of the bacterial emulsion.

Next, the emulsion of living germs is diluted so that each cubic centimeter of the bacterial emulsion will contain the required number of millions of bacteria. The bacteria are now killed by heating the liquid at a temperature of about 55° to 60° C. for a half hour or so. The degree of heat necessary to kill the bacteria varies considerably, according to the species of microorganism involved.

Culture-tubes are inoculated with the bacterin, to make certain that the latter is indeed sterile. If no growth results in the culture tubes, a small percentage (usually 0.5 percent) of phenol or of trikresol is added to the bacterin, in order to prevent contamination from without the container. The bacterin now is ready for use.

[To be continued.]

American Medicine for American Physicians

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INTERESTED, as I have been, for forty years, in a study of the materia medica, in an effort to determine the exact medicinal properties of individual drugs, with especial reference to their reliable and, if possible, invariable action upon exact conditions of disease, it is not at all surprising that the entire field of investigation has separated itself into distinct classes. The grouping of remedies with reference to their mineral or chemical characters, to their vegetable origin, to their synthetic production, is a grouping that suggested itself, but these dis-

tinctions have not been studied as carefully as they should be with reference to any rational influence that they may exercise upon the human body in disease.

My studies have naturally caused me to discriminate against remedies that are not, in any of their influences or in the physical properties or chemical constituents, an essential part of the human system. This I cannot here enlarge upon, but it is an important discrimination. That class of remedies which act upon the system in disease in much the same manner as do nature's foods in health

have gradually, after long years, appealed to me as the most rational of all remedies.

As I have studied this rational line, I am more and more convinced, because of their essential, stable, and permanent character, that no class of remedies will ever replace, in their specific adaptation to the common phases of disease, the vegetable remedies. I am confident that they are of very first importance, as they were considered in all past time, except in the last three or four decades, when all attention has been centered upon surgery, while the colleges nearly ceased to teach medicine.

I am not, by any means, a botanist and have never been classed as a botanical physician. I have made myself as conversant with the remedies of one class as I have with any other; in fact, I began my studies with the old stable inorganic class of remedies—which will always hold their place. I am confident that each of the classes has an important place in therapeutics, when it gravitates into that place. The synthetic remedies have the narrowest field and as a class are least useful. But, the underlying truth, the basic permanency of the influence of the vegetable remedies and the natural manner in which they stay the progress of disease, in which they influence the normal vital processes, encouraging them to reassert themselves and assume control of the vital functions of the various organs of the body, is so different from the influence exercised by any other class of medicines that naturally I have found myself developing such a predisposition to faith in these remedies as I cannot possibly have in any other class; and, yet, I by no means am ready to exclude other remedies or other measures.

I am watching, with the keenest and closest observation, the development of the serums, antitoxins, and hormones, the evolution of the truth concerning their reliable action, in order that I may see, if I live long enough, whether these may not be superior, if not in a general way, at least in certain specific lines. If they are, they should have their place; but, until they are so proven, I must necessarily keep my faith in the action of vegetable remedies.

America Yields All The Drugs We Need

Just at this particular time, when foreign drugs can no longer be obtained, because their importation has been cut off, we are forced to look elsewhere for our supply; and just at this psychologic moment the knowledge of our own products that I have acquired

brings me, with startling sharpness, to the recognition, if not (at least to myself) the discovery, of the fact that *American physicians have right here at home everything we can possibly need in the cure of the sick* in a most reliable, permanent, sufficient, and satisfactory class of remedies, that either have had their origin in this country or the knowledge of which has been developed in this country.

Coming now to the consideration of "American Medicine," I shall include in that term all those remedies the working-knowledge of which (the clinical observations and bedside experiences) have developed in the United States. When I speak of American medicines, I refer to those remedies that have their origin in the Americas and which have been developed within the United States.

The Contributions of the "Schools"

In the development of these remedies, all schools of medicine have taken part. Unfortunate it is that the dominant school has but seldom recognized any labor other than that done by its own members. This has engendered a prejudice, especially on the part of its students, that has prevented many an anxious young physician from looking into the action of some very superior agent which on occasions might have assisted him in some trying emergency.

So engrossed has this school been in surgery, and so very much has been accomplished in this field, during the time when the knowledge of these native vegetable remedies was developing, that the larger attention has been given to drugs by the adherents of the Homeopathic and the Eclectic schools of medicine; both of these being largely therapeutic rather than surgical schools, as is the dominant school.

It certainly would seem to be consistent with the spirit of the age, with the advancement of civilization, with the general intelligence of our time, and with the inclination to put down bigotry and prejudice that the surgical school should have been as willing to look into the measures of the therapeutic schools as the latter ever have been ready to consider and adopt promising suggestions of the former.

In the work of the therapeutic schools, the Eclectic physicians have paid the largest attention to the medicines of vegetable origin probably for the same reason that I have given as influencing me in this study. After this brief diversion, let us return to the subject under consideration.

My aim, as said, will be to show that those remedies that are characteristically of American origin, I have some grounds for my belief, offer a sufficiency of resource in the materia medica for the physicians of America—in fact, of any part of the world—if they desire to demonstrate their sufficiency, or, indeed, their superiority.

The Active Principles Developed in America

No one will deny the right of the American physician to claim that the therapeutic development of the alkaloids—the active principles—is largely the result of American industry. Many of the proximate principles of the drug-plants were originally discovered in this country, and their separation and the development of the knowledge of their specific place in therapeutics can properly be placed to the credit of American physicians.

In an article in favor of the alkaloids, *The Medical Council* for December last says that there are listed in the eighth edition of the *Pharmacopeia* ten alkaloids, twenty-six alkaloidal salts, fourteen preparations of the alkaloids, besides others of this class, including seven resins, three approximate resins, and two glucosides—making a total of seventy in all. Together with those that are enumerated in "New and Nonofficial Remedies," a total of 130 have an established value; so that it may be said that active-principle medication has "arrived" in official literature.

During the early days of the alkaloids, but few outside of specialists seemed to be attracted toward them, while at the present time probably from 30,000 to 40,000 physicians in the United States depend upon these remedies as their principal medicines, while a very much larger number include at least a portion of this class of remedies.

It is now generally acknowledged that the proximate principle does not represent the whole drug in all its therapeutic influences; consequently, it is important that both the whole-plant drug and its active principle be studied, each independently. And in no country in the world, at the present time, are these drugs studied so assiduously or is there so much attention being paid to securing definite knowledge regarding both of these classes of remedies as by our own practitioners.

The very wide adoption of the alkaloids by the busy, isolated practicing physician, in his everyday practice in America, must be credited very largely to the persistence and

assiduity of one individual, namely, Dr. W. C. Abbott, just as the perfection of the fluid forms of vegetable drugs and the marked advancement of their definite, reliable, and invariable character is to be credited to one individual, Prof. John Uri Lloyd. And these two forms of organic medicine give to American physicians access to stable, reliable, thoroughly proven, and highly satisfactory remedial agents. It has taken at least half a century to accomplish this result, but I am confident that the time has arrived when we are justified in asking the world to accept the result of these observations as authentic, fully proven, and these preparations more dependable than any other known definite products.

Give Us Dependable Drugs

I cannot refrain from once more quoting from the article in *The Council* referred to, in order to confirm the correct character of the conclusions that our investigations have brought to us.

"The balanced therapist," we read, "has no prejudice for or against the active principle, or for or against the so called galenical products; but he has a prejudice against uncertain drugs, be they alkaloids or galenicals." Again, he says: "The day is fast passing in which 'so much' crude drug digested so long in 'so much' alcohol will pass muster as the proper way to make a tincture. This is the day of careful assay of each batch of the crude drugs and careful standardization of the finished tincture."

This method began with Eclectic physicians in the year 1870, and it is now approaching perfection in their "specific medicines."

Further, Doctor Blair adds: "We want our proximate principles and our galenicals to be equally dependable, for, we need both classes of products." And again he says: "To the physician who is obsessed by the idea that alkaloids have practically the sole place in the therapy of botanic-drug medication, we would urge a short course in the wards of any good hospital. To these men, as also to those who are prejudiced against the well-grounded advocacy of the alkaloids, we wish to urge the study of authoritative literature upon pharmacology and therapeutics."

"Some men," to conclude these quotations, "use altogether too much alkaloidal medication, while others employ alkaloids for too little if they hope to treat successfully sthenic cases of acute disease and the emergencies of practice."

To both of these, the advice is, that they study both classes of remedies until their methods are well balanced.

A List of American Remedies

In considering strictly American medicines, the following may be named as among the important remedies that either are indigenous to the Americas or to the United States' possessions, viz.: rhus, gelsemium, veratrum, scullcap, macrotys, capsicum, cinchona, hydrastis, berberis, avena, coca, cactus, apocynum, lobelia, ipecac, grindelia, pines and spruces (turpentine), prunus, tolu, yerba santa, collinsonia, papaya, cascara sagrada, podophyllum, leptandra, iris, chionanthus, jalap, rhubus, geranium, echinacea, baptisia, phytolacca, stillingia, gaultheria, hamamelis, thuja, uva ursi, kava, hydrangea, salix nigra, saw-palmetto, damiana, serpentaria, black haw, senecio, helonias, caulophyllum, polygonum, erigeron, epigelia, guaiacum.

These remedies not only are indigenous to America, but they have been developed almost exclusively in this country. In addition to these, there are other quite well-known remedies that are important in narrower fields; among them being lycopus, blood-root, sticta, asclepias, boneset, dioscorea, juglans, eupatorium, mitchella, and fraxinus.

But these two lists do not include all the remedies that I would call strictly American Medicine. In addition, as I have stated, we have a right to claim as a part of American medicines those remedies the therapeutic properties of which have been largely developed in our country; for, although now being raised in this country, we have, for most of them, been depending upon foreign countries to supply us. Under this heading, there may be mentioned aconite, bryonia, cannabis, conium, hyoscyamus, oenantha, ergot, chamomile, pulsatilla, mistletoe, nuxvomica, ignatia, eucalyptus, belladonna, calabar-bean, convallaria, adonis, and cratægus. There are, in addition to these, a number of remedies, such as digitalis, that have been used freely in the old country, but their action has been studied more effectually among American physicians, the reports upon which have very much added to their value to the clinician. I could make up quite a list of remedies of this class.

We have a right, also, I think, to include among American medicines a considerable number of mineral remedies that once were well known, but were retired, to a large extent, during the "surgical period" of

medical progress, and are now being restored again. While more reports are reaching us from Europe than from America concerning, for instance, the use of iodine as an antiseptic, our own observations have been equally as important, and it has been left largely to American physicians to undertake to apply iodine, in the form of vapor, in the treatment of wounds and open ulcers.

Similar statements can be made concerning a large number of remedies. When we come to the consideration of biologic and laboratory products, we could name a number of firms in this country that have taken the lead in the development, perfection, and manufacture of serums, antitoxins, and bacterins; and their products have not been excelled by foreign manufacturers.

All this is contributed to American medicine, and, when these facts are well considered, I am confident that the readers of this journal will agree with me that we need no longer go abroad for our tools wherewith disease shall be controlled and cured, but that we may use that which we have of our own in medicine, and the methods that American physicians have developed; and, when applied in specific and definite lines and in a specific manner, I will assert that we can readily prove that we have many things superior to any other nation.

It behooves us, then, to cooperate and work without prejudice, with energy and zeal, with the definite object in view of establishing for American physicians a reputation for superiority both of product and method, and of results as well. I shall take up, in another article in this journal, definite measures by which these facts can be proven.

Very much can, and will, be said further in this line, but to get at once at the crux of the whole question, I want to refer to a study and investigation that was made, in 1912, concerning the action of vegetable remedies and their use.

Some Studies Anent Vegetable Drugs

The Committee of the United States Pharmacopeia has, among its other duties, the collection of statistics regarding the frequency of the use of the official and nonofficial drugs by the medical profession in the United States. At the time in question, an independent investigator was requested by the American Pharmaceutical Association to look into this matter and report at its next annual meeting (in 1912). This, to a limited extent, was accurately done, 30,000 physicians having been consulted. These physicians

were located in every section of the country. They were asked from what college they had been graduated and whether they were qualified to practice medicine under the state laws, but no other information anent their professional affiliations was solicited. They were selected without regard to any school of practice. Those were selected who were engaged in the general practice of medicine, choosing a moderate number of physicians in the larger cities, in an effort to equalize the reports of the city and the rural practitioners. More than 10,000 reports were returned on the blanks that had been sent out.

Some most surprising revelations were made. Among the remedies that I shall mention of those that were reported, only the following were not official in the U. S. P. (all others being official remedies); namely: cactus, echinacea, thuja, bryonia, pulsatilla, collinsonia, passiflora, chionanthus, gaultheria, dioscorea, baptisia, trifolium, drosera, avena, ignatia, adonis, pinus canadensis, chelidonium, and erigeron. (The oil of erigeron was official.)

The Surprising Vogue of Cactus

Of these, it will be a surprise to the readers to find—notwithstanding cactus has been unreservedly condemned by the A. M. A. Council on Chemistry and Pharmacy—that it stood first in the list, 6229 out of the 10,000 physicians reporting that they were using cactus.

Now, please, bear in mind again that all but those I have mentioned as unofficial are official in the 1900 edition of the U. S. P. Hydrastis, aconite, gelsemium, and ipecac were named by more than 5500 physicians.

Between 5000 and 5500 reports mentioned digitalis, ergot, belladonna, nux vomica, hyoscyamus, and echinacea—in the order here shown.

Between 4500 and 5000 physicians mentioned viburnum, valerian, podophyllum, thuja, opium, cascara sagrada, bryonia, colchicum, capsicum, lobelia, pulsatilla, apocynum, and gentian.

Between 4000 and 4500 mentioned saw-palmetto, veratrum viride, hamamelis, phyto-lacca, viburnum, macrotys, collinsonia, can-

nabis, passiflora, chionanthus, arnica, strophanthus, cinchona (quinine).

Between 3000 and 4000 physicians mentioned sanguinaria, caulophyllum, cinnamon, rhus toxicodendron, colocynth, gaultheria, dioscorea, baptisia, asclepias, elaterium, iris, spearmint, stillingia, senna, leptandra, charcoal, helonias, jaborandi, grindelia, gossypium, stramonium, aletris, hydrangea, and licorice.

Between 2000 and 3000 physicians mentioned cubeb, guaiacum, taraxacum, santonica (santonin), calendula, cratægus, jalap, rhu-barb, triticum, damiana, berberis, physostigma, sarsaparilla, xanthoxylum, trifolium, drosera, quassia, avena, scull-cap, ignatia, squill, erigeron, coca, adonis, conium, uvi ursi, lycopodium, convallaria, geranium, senega, staphysagria, chelidonium, pinuscanadensis, hops, calumbo, sassafras, eupatorium, and serpentaria

I will not enumerate specifically those that were mentioned by less than 2,000, but among them are a great many that are named in the Dispensatory, as above specified, and a few that are quite well known. This investigation would certainly change our sentiment concerning the selection of vegetable remedies.

In order to establish that these reports did not represent any particular school of medicine, a similar questionnaire was submitted to Eclectic physicians. In comparing the answers sent in by this group of physicians with the reports made by physicians of all other schools, it was found that there was a great deal of similarity of opinion as to the action of certain given drugs.

I have said that more than 6000 replies in the first report mentioned cactus. In this later comparative report, it was found that cactus was twelfth in order among Eclectic physicians, while it was the ninth among those physicians belonging to other than the Eclectic school. Among the first 13 remedies that were found to be classed about the same by Eclectic physicians and by those of other schools were the following: gelsemium, aconite, bryonia, macrotys, echinacea, belladonna, veratrum, cactus, nux vomica, phyto-lacca, and pulsatilla.

(To be continued.)



What Others are Doing

BACTERICIDAL PROPERTIES OF COPPER AND SILVER

Since writers have doubted the direct bactericidal action of certain metals (e. g. copper, silver), Natonek and Reitmann, of Czernowitz, proved the fact (*Zeit. f. Hyg. u. Inf.*, Bd. 79, H. 2) by means of the following experiment: They placed clean coins upon a sterile agar-plate and allowed them to remain for a number of hours. After removing the coins, bacteria were sown all over the plate, and no growth occurred on the agar where the metal had lain, and even for some distance beyond the edges.

THE CARMINE-TEST FOR LEARNING THE MOVEMENT OF THE GASTRIC CONTENTS

While radiography offers positive evidence of the forward movement (or the stagnation) of the gastrointestinal contents, Doctor Strauss, of Berlin, warmly pleads for the more general adoption of the carmine-test for the same purpose (*Arch. d. Verd.-Krankh.*; cf. *Muench. Med. Woch.*, 1915, p. 442), maintaining that, aside from its simplicity and cheapness, it answers the same purpose, at least for all ordinary purposes, of determining how long ingesta remain in any portion of the digestive tract.

In the same number, Doctor Schuetz, of Wien, criticizes adversely all the "innumerable" methods proposed as substitutes for the one devised by himself—that is, the use of the sound for withdrawing from the stomach specimens of its contents for examination. This method, he asserts, should find general acceptance.

DIPHTHERIA-CARRIERS, AND THE NOSE

For years, says V. Engelmann, of the ear and throat department of the Israelitic Hospital at Hamburg (*Muench. Med. Woch.*, 1915, p. 397), he has maintained that little progress will be made with regard to the carriers of diphtheria-bacilli until first of all general attention is paid to the nose of those

who have had the disease or been exposed to the infection. In the present brief communication, Doctor Engelmann merely presents details concerning four children of school-age whom the mother brought for inspection, after a fifth child had recently died of diphtheria.

All four presented the appearance of health, although one had a slightly sore nasal ala, while in another one the tonsil was slightly reddish, with a hardly visible spot; and in the throats of these two a very few bacilli of the short variety were found. However, when the noses of these children were tested, all four revealed the presence of large numbers of the long and the short forms of the diphtheria-bacillus, besides the usual staphylococci and diplococci. The point made is, that these children attend school and that under certain favoring conditions the diphtheritic germs will become activated and they thus become a focus of infection. Hence, *cherchez la nez—toujours*—always.

HEXAMETHYLENAMINE IN TYPHUS FEVER

In a preliminary communication to the *Muenchener Medizinische Wochenschrift* (1915, p. 418), B. Cogliervina, stationed in the military hospital at Graz, speaks in the highest terms of the service given by urotropin (hexamethylenamine) in combating typhus fever; although, he admits, it has been thus used in but a few cases. The idea underlying his trials in this direction was, that the substance is decomposed in the body into formaldehyde and thus serves as a constitutional disinfectant. He calls the results observed in this malignant disease "remarkable."

One notable observation in this urotropine-treatment—one in agreeable contrast from the quinine-therapy—was, that the disturbances of the central nervous system scarcely were worth noting; the author inclining to explain this by the proven fact that hexamethylenetetramine specifically exerts a bactericidal action in the cerebrospinal canal. Furthermore, the patients so treated

remained free—or almost so—from the frequently very severe enteric symptoms attacking typhus-patients.

As to the dosage, Coglievina was guided by the fact, established by J. Crowe, that a daily dosage of 5 Grams of urotropin is capable of keeping the bile sterile. So, each patient was dosed as follows: 1 Gram of the remedy three times on the first day, four times on the second, and on the third day, and subsequently, five times. The precaution is necessary, to test the urine daily; however, in these patients, neither renal nor vesical disturbances were evidenced.

Incidentally, the only other treatment consisted in combating the high fever with cold-packs for the thorax and legs, and application of an ice-bag for intense headache.

FROSTBITE EXPERIENCES

Frostbite is presenting serious problems in the European armies, especially among the Germans. In one article, the *Wiener Klinische Wochenschrift* describes a series of 105 such cases; of these, 3 required amputation through the thigh. Besides the surgical treatment demanded, the methods applied were, alternate hot and cold baths, carbon-dioxide baths, and hot- and cold-air douches; wet dressings of pepsin and hydrochloric acid, to separate necrosed tissues; sterile gauze, smeared with boric-acid salve to cover the necrosing portions.

In *The British Medical Journal*, Davis writes that the most satisfactory treatment found was this: cocaine, 8 grains; olive-oil, 4 drams; lime-water, 4 drams; a little to be rubbed in twice a day, and the feet then wrapped in cotton wool. The addition of 2 ounces of liquid paraffin keeps the mixture from drying rapidly and delays oxidation. After the oil has dried on the feet, they should be powdered with a mixture of camphor, 25 grains; zinc oxide, 4 drams; starch, 4 drams. When the acute state has passed, the oil is mixed with increasing proportions of carbolyzed oil.

It is not always easy to tell just how much of the affected tissues is going to die. Generally some of the tissue will perish, while some may perish if the applications made are likely further to depress the vitality of the weakened tissues. Cocaine acts by dilating the vessels and letting in a better nutritive supply of blood.

Some years ago, the present writer had an edifying experience with the application of nuclein to an area where it was doubtful

whether the tissues would live or die. They lived; and he has always since acted on this hint of improving the local nutrition when needed. A friend accomplished the same object by applying a crushed tablet of the Bulgarian bacillus, and he testified that the almost instant regeneration of the imperiled parts was amazing. We have repeated this observation and believe that this principle should be widely applied in the treatment of wounds, as well as of frostbites.

With many, the application of local remedies is as senseless as the commingling of so-called expectorants. The doctor gets to using some one ointment (citric or red mercuric oxide, zinc oxide or some advertised preparation) and applies that whenever he uses any ointment. Selection of an antiseptic, sedative, irritant, absorbent, protective, antipruritic or nutritive never occurs to him. Yet, nothing is easier than to observe the local action of remedies applied to the surface of the body, or to decide which is needed in each given case.

The Bulgarian bacillus is destructive to some morbid germs; but which ones, or how generally it is thus applicable, is yet to be defined by wide experiment. The early observations show that it is worth while to push this experimentation to the limits. Where is there another local remedy that is as safe and, yet, possesses such possibilities of usefulness as this one?

"ROPE" IN BREAD

Infection of bread by the potato-bacillus (*bacillus mesentericus*) causes the condition commonly known as "rope." During July, 1914, says G. L. Qualis (*Milit. Surg.*, June, 1915, p. 517), the entire bread supply of that part of the second division of the United States army stationed at Texas City, Texas, was infected with this bacillus. For the first few hours after baking, there was little or no change at ordinary temperature, but after twenty-four hours an odor developed not unlike that of unripe canteloupe. A few hours later, yellow or brown spots appeared and the bread became sticky in the center, these soft spots spreading rapidly, until within thirty-six to forty-eight hours the entire central portion of the loaf became a semifluid sticky mass, totally unfit for food. This portion of the loaf could be pulled out into long strings or ropes. In smears made from these ropes and stained with methylene-blue, the microscope revealed the presence of large numbers of a thick bacillus, with

rounded ends, together with free spores, both spores and bacilli being gram-positive.

A large amount of flour had been used in making this bread, and an investigation showed that this batch of flour was contaminated with the potato-bacillus. Some of these bacilli, it then developed, were present in all of the samples of flour furnished, even when coming fresh from the mill. Condemnation of the stock of flour was seriously considered; but it was finally discovered that the addition of acetic acid (or vinegar), in making the dough, served to prevent the development of the "rope." Tartaric acid likewise gave this protection, but it has no superiority over acetic acid except that it is solid and, hence, easy to transport.

TOO MUCH OR TOO LITTLE PROTEIN

If, on the one hand, cancer is caused by the consumption of *too much* animal food, as claimed by Beveridge (*N. Y. Med. Jour.*, Aug. 21, 1915, p. 387) and others; and, on the other hand, pellagra is caused by eating *too little* of the same kind of food, what, one may ask, can the average person do to escape the Scylla of pellagra and the Charybdis of cancer? Down south, if you eat too little meat, you will catch pellagra; if you eat too much of meat, you will die of cancer. And there you are!

OIL OF TURPENTINE FOR EXTERMINATING LICE

To some, the subject embraced in the title may seem to be overworked; and, yet, the announcement that plain oil of turpentine (rectified, of course—when accessible) will do everything claimed for the numerous other more or less expensive or rare agents must be esteemed of distinctly demologic importance; while, moreover, it should claim our attention now that louse-borne typhus fever is raging in our neighboring republic to the south.

The information in question has been published by Theo. v. Marschalko, of Klausenburg, in the *Deutsche Medizinische Wochenschrift*, who declares that the oil of turpentine is the best as well as cheapest substance for killing both body-lice and head-lice, as well as their eggs, besides other parasitic vermin. And what, from the sanitarian's point of view, is of greatest importance is, that this article can be obtained anywhere and because of its cheapness may be employed freely and without stint. It may be

applied direct or, for textiles and furniture, in the form of spray. Of course, the odor is objectionable, and clothing must be washed (lest the oil resinify in it), but that can not weigh when masses of naturally unclean people are concerned—such as the Mexican peons or the indigent negroes of the South—and at the same time economy and availability must be considered. One fact must be borne in mind, though; namely, that certain individuals are extremely sensitive to the action of oil of turpentine, in various ways, even sleeping one night in a freshly painted room being enough to cause bloody urine.

Incidentally, many military physicians now also seem to employ kerosene freely for the same purpose.

THE ERADICATION OF LICE

During recent months, we have published several abstracts from German and other foreign journals relative to the eradication of lice. In view of the fact that typhus fever and doubtless other diseases are transmitted by this troublesome parasite, this is a matter of considerable medical importance. In *The Journal of the American Medical Association* (Jan. 22, p. 273), we find a suggestion, originally proposed by Sabouraud, that xylene, a colorless liquid coal-tar product, will be found an effective pediculicide.

Xylene has a penetrating but not unpleasant odor and mixes with alcohol and ether, but not with water. Not only will it destroy the lice, but it will penetrate their ova and kill these also. When undiluted, it causes a sharp, burning sensation of the skin, but the pain thus produced does not last long and no blisters or dermatitis follows. The xylene readily evaporates and is highly inflammable, hence, should never be used near a fire or open flame.

A mixture of xylene, alcohol and ether is recommended by Faniel as being safe and efficient. For head-lice, cotton may be soaked with the mixture and the scalp thoroughly gone over with this xylene mixture, all the strands of the hair being drawn through the cotton saturated with the solution. Generally one application is sufficient to destroy all the parasites and nits. A treatment of one-half hour will be often fully effective, even when the hair is long, as in girls and women.

If the skin is broken by scratching, Lane recommends the application of a mixture of xylene with petrolatum, in the proportion of 4 parts of the former to 30 parts of the latter,

this to be followed latter by the xylene solution already suggested.

THE GERMAN CAMPAIGN AGAINST LICE

We have printed a good many quotations from German literature relative to the danger from typhus in the European war-zone and the role played by lice in its causation. That this disease is dangerous to the surgeon as well as to the soldiers, is demonstrated by the fact that it has claimed some illustrious medical victims—among them Jochmann and von Prowozek, whose claims to distinction, curiously enough, were largely based upon their investigation of this very ailment.

Without going into details regarding the measures and the practice resorted to for destroying the lice, it is interesting to find that most German investigators seem to have come to the conclusion that sulphur vapor is the simplest and cheapest as well as the most reliable agent for the destruction of the lice and their eggs in clothing and buildings.

Some very interesting experiments have been tried, especially in the prisoners' camp at Koenigsbruck. Nearly all the Russian prisoners were infested with lice and thus provided good subjects for experimentation. Their clothing was sterilized in sealed rooms, and the sulphur vapor developed was exceedingly concentrated.

NITROBENZOL-POISONING CAUSED BY INHALATION

Doctor Schultz reports the poisoning of six soldiers in his regiments by nitrobenzol-vapor, a constituent of a Polish proprietary exterminator of body-lice. The men (*Muench. Med. Woch.*, 1915, p. 458) had sponged their bodies with the liquid, while one also had sprayed his garments and then lain down to sleep. The latter exhibited the most severe symptoms and barely escaped succumbing. The room was filled with the vapor, which also seemed to contain some petroleum-ether.

All of the victims exhibited a peculiar yellowish-white hue of the skin, shading lightly into gray, and their lips were of a leaden-gray color; all experienced mental disturbances, while part of them had attacks of vertigo and fainting.

The one seriously affected lay unconscious seemingly doomed, breathing rapidly, with bronchial râles developing, and the pupils greatly contracted. The characteristic dusky color of the skin and the lips was very marked;

sharp pinching of the skin produced no sensible reaction. This patient, as well as the rest, was sponged over thoroughly, garments were changed, the room was ventilated; then was given injections of camphor and caffeine. Two hours later, he showed signs of pain when pricked, and consciousness slowly returned during the following day.

One other of the men had reapplied his chest protector and, so, toward evening, became unconscious, and did not recover until the next morning. The men retained their pallid appearance and feeling of weakness for several days. In one of them, albuminuria appeared, for which he was sent to the hospital.

We urge every reader of CLINICAL MEDICINE, working in the industrial centers, to familiarize himself with the symptoms and treatment of nitrobenzol poisoning, since this substance is one of the essential "primaries" used in making aniline dyes, photographic chemicals, coal-tar synthetic drugs, and high-explosives. And this industry is growing in America—and bound to grow.

POISONING FROM MERCURIAL INUNCTION

In discussing the various pediculicides—in connection with typhus fever—Dr. O. v. Herff (*Muench. Med. Woch.*, 1915, p. 457) mentions the fact that he personally once was seriously poisoned by a single inunction of one of his arms with plain mercurial ointment, which had been allowed to remain on for twelve hours. He tells that this brought on stomatitis, and salivation, besides other mercurial symptoms, which resisted treatment for several months.

This reminds us that in a recent American medical journal (which we have mislaid) fatal poisoning followed the use of several bichloride of mercury tablets in a solution used for vaginal douching.

CALCIUM SULPHIDE AS AN ANTIDOTE FOR MERCURY POISONING

We find in *The Lancet-Clinic* of December 18, last, a report of the use of calcium sulphide as an antidote for bichloride of mercury poisoning, presented by J. H. Wilms (see p. 555). He tried this remedy out experimentally on a dog which had received 7 1-2 grains (tablet) by mouth. Two days later, 7 1-2 grains of calcium sulphide was injected into the jugular vein of this animal, and after two days more it had fully recovered.

In 1913, says Doctor Wilms, while an interne in the Cumberland Street Hospital in Brooklyn, he had a patient who had taken with suicidal intent, 56 grains of bichloride of mercury by mouth. The woman made an uninterrupted recovery after having taken 1-10 grain of calcium sulphide every half hour during a period of four days.

Wilms now has the records of 6 cases of mercury-bichloride poisoning treated with calcium sulphide. Of these, 5 have recovered, while 1, who had taken 110 grains of bichloride of mercury and was moribund when first seen by the Doctor, has died.

Doctor Wilms explains that when calcium sulphide comes into contact with bichloride of mercury, double decomposition takes place, the CaS plus Hg Cl_2 , yielding HgS (mercury sulphide) plus Ca Cl_2 (calcium chloride); the former insoluble and the latter inert. Calcium sulphide is water-soluble in the proportion of 1 : 500, or about 1 grain in 1 ounce, when boiled.

Do not forget Carter's mercury antidote. It contains sodium phosphite and sodium acetate.

THE ALLEN TREATMENT OF DIABETES

No method of treatment of diabetes suggested within recent years has attracted such favorable attention from the medical profession as that offered by Dr. Frederick M. Allen, now connected with the hospital of the Rockefeller Institute for Medical Research. Already there is an extensive literature upon this method of treatment, while one book has been published devoted to this subject, namely: "The Starvation Treatment of Diabetes," by Lewis Webb Hill and Rena S. Eckman.* We are informed that a second edition of this book is now ready. In due season it will be reviewed in these pages.

In *The Journal of the American Medical Association* for September 12, 1914 (p. 939), Allen described in some detail his experimental investigations conducted upon dogs, these leading to the introduction of the improved dietetic therapy now adopted. Quoting Friedenwald and Linbaugh (*Interst. Med. Jour.*, Feb., 1916, p. 73), it was observed "that by destroying a portion of the pancreas (of dogs) and thus producing glycosuria, this condition could be overcome by fasting and that the animal could be placed on a diet which would maintain life without producing glycosuria again."

Allen applied this principle to the treatment of patients affected with diabetes; in other

words, the essential element in the treatment is the reduction of the intake of food, especially of carbohydrates, to the point where sugar disappears from the urine and, presumably, from the blood. This involves, first, a period of absolute abstention from food, or starvation; and for this reason the Allen method of treatment is often called the "starvation treatment" of diabetes. There are, however, other important features, which are briefly epitomized by J. T. Halsey (*New Orleans Med. and Surg. Jour.*, Feb. 1916, p. 501) as follows:

1. A period of absolute fasting, lasting ordinarily from one to four or five days—in extreme cases, as long as ten days.

2. A succeeding period of underfeeding, during which the patient is given much less food than is usually considered necessary. This period varies in length according to the presence or absence of sugar in the urine.

3. A very careful determination of the quantity of food (not only carbohydrates, but also proteids and fats) which the patient can consume without producing glycosuria or glycemia.

4. Careful avoidance of increase of weight, unless the patient is decidedly under weight.

Taking up these factors in detail:

1. *The inaugural fast.* It is stated that as a rule the inaugural fast need not be longer than two to four days. It is continued, as a rule, about twenty-four hours beyond the time necessary to secure absolute disappearance of sugar from the urine, together with disappearance or marked diminution of the acidemia. During the fasting period, the patient was originally allowed no food whatever, with the exception of whisky or brandy. Of this alcoholic, from 4 to 8 ounces may be taken in each twenty-four hours, in small doses at from one- to three-hour intervals. The alcohol is allowed, not as a stimulant, but purely as a food, since it provides available caloric values without danger of production of glycosuria.

The patient is allowed to drink plenty of water or weak tea (the latter without sugar or milk), and more recently also a small amount of beef broth (2 ounces four to six times in the twenty-four hours), provided the fast is prolonged beyond two days. If there is acidosis, alkalis may be given; and it is stated by Halsey that, even if no acidosis be present, it is probably wiser to give alkalis when starving the patient for the first time.

2. *The stage of underfeeding.* Following the period of fasting, the patient is put upon a restricted carbohydrate diet, in order to

*Published by W. M. Leonard, Boston Price, \$1.00.

establish the degree of the patient's tolerance. Vegetables containing 5 percent of carbohydrates are first allowed. An excellent diet list, covering the food requirement in these cases, with carbohydrate percentages, is given by Joslin (*Amer. Jour. Med. Sci.*, Oct., 1915). Among the 5-percent carbohydrate-vegetables, he mentions spinach, beet greens, sauerkraut, string-beans, asparagus, cucumbers, dandelion, cauliflower, tomatoes, rhubarb, eggplant, cabbage, radishes, pumpkin, and kohlrabi.

At first, about 5 ounces (150 Grams) of these vegetables should be given per day. In severe cases, when the green vegetables cannot be partaken of without producing glycosuria, they should be boiled three times, without change of water, thus reducing their carbohydrate content nearly one-half. The quantity of the 5-percent carbohydrate-vegetables can be increased by 3 or 4 ounces a day until the daily ration reaches 16 to 20 ounces (500 to 600 Grams). This will give a total carbohydrate content of 5-8 to 1 ounce (25 to 30 Grams).

If no sugar has appeared in the urine, the food then can be gradually increased by the addition of vegetables containing higher percentages of carbohydrates. For instance, the following vegetables contain 10 percent: onions, squash, turnips, carrots, okra, mushrooms, beets; the following contain 15 percent: peas, artichokes, parsnips, lima beans; the following, 20 percent: potatoes, shell beans, baked beans, green corn, boiled rice, boiled macaroni.

It is now permissible to add fruits, beginning with those containing the smaller percentage of carbohydrate, and increasing gradually, provided tolerance is maintained, until the patient is taking about 1 ounce of carbohydrate to each 20 pounds of body-weight. The reappearance of sugar or of diacetic acid in the urine is a sign that all nourishment should be stopped for twenty-four hours, food being resumed with about half the maximum ration required up to this point.

3. *Tolerance for other forms of food.* When there has been no glycosuria for two days, two or three eggs may be given, and, if no bad results follow, the number may be increased by two each day, until a daily ration of six is reached; or, meat may be allowed, increasing the amount by about 2 ounces daily, until the patient is taking 1-6 ounce of protein (about 2-3 ounce of meat) per 10 pounds of body-weight, daily. The reappearance of sugar or of diacetic acid calls for the same

measures as if caused by too large a percentage of carbohydrates.

Soon after proteins are allowed, small amounts of fat, in the form of butter and bacon, are permitted. This quantity should not exceed 1 ounce of the former or 4 ounces of the latter, until the patient is getting his full protein ration. At this time, the fat may be increased by 1-2 to 1 ounce daily, until the patient holds his weight or is receiving about 2-3 ounce per 10 pounds of body-weight.

4. *Control of weight.* Heretofore it has been almost an axiom that diabetics should be made to put on flesh, if possible. Allen's view is opposed to that hitherto advanced in this respect. Unless the patient is decidedly under weight, an increase is considered distinctly undesirable and fraught with danger. As a general rule, Allen advises that the patient be brought back to a weight 10 or 15 pounds under his normal figure, providing this indicates a fair degree of nutrition. If the patient is obese, he considers it desirable to reduce the weight very decidedly.

Periodical fast-days. If the carbohydrate tolerance is very low, that is, if below 2-3 of an ounce (20 Grams) of carbohydrate, a weekly fast for twenty-four hours is prescribed; while, if the condition is less severe, the patient having a tolerance of 2 ounces (60 Grams) of carbohydrate, a semi-fast-day is prescribed every seventh day, during which the patient is permitted the 5-percent vegetables only, and in amounts totalling only half the usual carbohydrate ration.

Allen considers these fasting-days of the greatest importance, for two reasons: first, they build up and protect the tolerance, and, second, they serve to bring home to the patient the importance of dietetic care.

Quite recently (*Boston Med. & Surg. Jour.*, Nov. 11, 1915), Allen has recommended exercise in addition to the dietetic treatment just advised. The forms suggested are: running up and down stairs, jumping the rope, throwing the medicine-ball, and even such games as tennis, provided the patient has established a fair degree of tolerance. When first undertaking exercises, care should be taken that the patient does not suffer from overweariness, nervousness or insomnia as a result. Doctor Allen states that through these exercises "it is hoped that an end may be put to the period of pale, feeble diabetics, dressed in double underwear, while hugging the radiator and growing more neurasthenic all the time."

Physicians who have employed the Allen method of treating diabetics are enthusiastic in its favor. For instance, Friedenwald and Linbaugh, already cited, say:

"We have thus far treated 20 cases according to the Allen plan. Of these, 3 were severe cases, 10 moderately severe, and 7 mild. All were rendered sugar-free in from one to four days, and all have been kept free of sugar, with the exception of one case, in which the patient has not followed the dietary restrictions. In a very few instances in which sugar reappeared, this condition was overcome by a single day's fast. All the patients are in good condition, and are carefully following their dietary regulations."

The patients treated by Allen at the Rockefeller Institute were all of a severe type and for the most part presented very unfavorable prognoses. Of 40 reported, 35 were alive after some months of treatment, and the great majority were in a satisfactory condition. Of those who died, 1 left the hospital for disciplinary reasons; the other 4 were suffering from severe complications, such as advanced cardiac, renal or pulmonary disease, which were alleged to be more truly the cause of death than was the diabetes. As Halsey says, these results not only are satisfactory, but they are astonishingly good, in view of the character of the cases treated.

THE INDICATIONS FOR ACONITE

In an article appearing in the department of Modern Treatment and Preventive Medicine of *The New York Medical Journal* (Jan. 22, 1916, p. 178), A. D. Bush outlines the indications for the use of aconite as follows:

"The main indications for the use of aconite are definite and depend upon a curious physiological condition. With some patients, and under some conditions of acute infection, like that of acute bronchitis, the reaction of the system is almost violent. The temperature of the patient rises rapidly to 104° F. or higher, the heart beats with greatly increased vigor and frequency, there is a full pulse of high tension, a considerable rise in blood pressure, and an acceleration of respiratory activity. So sharp is the attack of the invading organism, and so vigorous the reaction of the system, that for the time being there seems actual danger of nature's overstepping herself and creating mischief through excessive activity. It is in such cases that some external regulating influence seems advisable.

"In such reactions, aconite is the only drug whose pharmacological provings show a true indication. Digitalis slows the heart, to be sure, but it likewise increases its force, besides producing an elevation of arterial tension. Aconite slows the heart rate by centric action, and the resulting output for each unit of time brings about a fall in vascular pressure, somewhat augmented by a probable depressant effect on the vasoconstrictor center. Incidentally there is a centric irritant action on the vagus, resulting in diminished respiration; also a coincident fall in temperature, from an assumed direct action on the thermic center. In this way, the well-designated 'runaway' condition of the circulatory apparatus is reined in and its force is directed more regularly and consistently to the task of expelling the invaders."

All of which is of great interest.

THE UTERINE ACTION OF EMETINE

We learn from an editorial in *The New York Medical Journal* (Jan. 22, p. 173) that the effect of emetine on the uterine muscle is the subject of some comment by Chalmers and Archibald, in a paper published in *The Journal of Tropical Medicine and Hygiene* (July 15, 1915).

The evidence submitted by the authors seems to show that emetine may cause contraction of the uterine muscle, and, so, the warning is given against its too free use during pregnancy and menstruation. It seems that a maximum of 1-2 grain daily is the safe dose during pregnancy. Given during menstruation, it may cause cessation of the flow. While no serious harm may result, it is advisable, if conditions permit, to postpone resort to the emetine until after menstruation has ceased.

EMETINE IN THE TREATMENT OF DYSENTERY

Further testimony to the value of emetine in the treatment of amebic dysentery is supplied by Sir Ronald Ross (until recently consulting physician on tropical diseases to the British Mediterranean Expeditionary forces) in a paper contributed by himself to *The Lancet* of January 1, (p. 1).

In his paper, Ross points out that emetine is now accepted everywhere as the remedy of greatest value in the treatment of dysentery, not indeed, because it is essentially superior to ipecac itself—as formerly used—but because the active principle can be admin-

istered in a form far less troublesome to the patient; moreover, he believes that emetine used hypodermically, brings the remedy more directly into conflict with the amebas imbedded in the floors of intestinal ulcers. Still, the powdered ipecac continues to hold a place in therapy, because of the possibility of its attacking the amebas located on the surface of the mucous membrane lining the intestine. "As an immediately applicable routine treatment," the author adds, "the hypodermic injection of emetine hydrochloride has certainly become a great boon to humanity, for which we owe a debt to Sir Leonard Rogers which cannot ever be repaid."

In discussing the forms of dysentery, Ross points out that the bacillary type prevailed most extensively among the British troops near the Mediterranean and the Red Sea until midsummer of last year. After that, there occurred an epidemic of the amebic type of dysentery, especially during July and August. At that time, Ross was on duty in Alexandria. This epidemic continued until about the end of September, after which, possibly as a result of the large use of emetine in early cases, possibly as a result of the natural decay of the epidemic, the amebas began to become more scarce. During the winter, he was told by men who have done work in Egypt a long time, the amebic dysentery is likely to be supplanted by bacillary dysentery.

Recurring to the treatment of dysentery, Sir Ronald Ross declares that in the bacillary type the sulphates of magnesium and sodium are practically specific, just as emetine is specific in the amebic type. While many believe that emetine is powerless against bacillary dysentery and the saline purgatives are powerless against amebic dysentery, it was the practice of the physicians in the British Egyptian service to employ the emetine in every case of suspicious dysentery, without waiting for a definite diagnosis as to the exact nature of the attack. This order, in his opinion, was absolutely demanded, and, the procedure proved very beneficial; first, because best results are obtained from emetine when it can be given early before there is extensive undermining of the intestinal mucosa; and, second, because there are undoubtedly many cases of dysentery of a mixed type, that is, both bacillary and amebic. Between 10 and 20 percent of the patients in which the emetine was employed were not cured; that is to say, they either died or the disease gradually merged into a chronic form. Most of these cases occurred in

patients who had not received the emetine early in the course of the disease and in whom, therefore, the mucosa was probably destroyed over a large surface before treatment was begun.

As a rule, emetine hydrochloride was given hypodermically in doses of 1 grain a day, either in one injection or in two doses, of 1-2 grain each, morning and evening. This treatment is usually continued for from three to five days, according to the custom of the different hospitals, followed by an intermission of three to five days, during which the injections were dropped. Other practitioners preferred to continue the emetine daily for some weeks, without intermission.

In one hospital, three patients died of dysentery, no other obvious cause being observable, and some suspicion was aroused that these deaths may have been due to heart failure resulting from a cumulative action of the alkaloid. However, after a careful examination of these cases, Ross is inclined to believe that evidence to support this position is unsound. However, the practice has gradually crystallized into the formula that, unless there is strong reason to the contrary, the emetine should be remitted for a time after about ten days of continuous administration.

SERUM-SICKNESS FOLLOWING DIPHTHERIA-ANTITOXIN INJECTIONS

With a view to ascertaining the frequency and severity of serum reactions following injections of diphtheria-antitoxin, 500 patients treated with this remedy in the Louisa Min-turn Hospital, New York, were selected for observation by Dr. Mills Sturtevant (*Arch. of Intern. Med.*, Jan. 15, p. 176). The antitoxin employed was the concentrated preparation prepared by the New York Department of Health. A skin-rash was taken as a determining factor, although other symptoms of some importance occurred in various cases, including malaise, nausea, headache, pains in the muscles, slight rise of temperature, and the like.

Of the 500 cases reported, 422 received antitoxin only once, while 78 received two or more injections. Of the 422 receiving one injection, 84, or 20 percent, showed symptoms; the percentage being considerable higher in those given two or more doses. The frequency of the reaction increased with the amount of serum given. The rashes, were of the urticarial type, in 63 out of the 84 cases, the remaining 21 being erythematous.

Of the 63 urticarial rashes, 43 were severe and general in distribution, the other 20 were mild and limited. The severity of the urticaria seems to be proportionate to the quantity of serum injected. In 16 of the patients, nausea and vomiting supervened, 4 had some edema, 25 showed some rise in temperature, and 13 experienced pains in the joints.

Doctor Sturtevant's summary, based upon his analysis of these 500 cases, is as follows:

1. A varying proportion of patients receiving modified horse-serum react by developing a rash and various other symptoms. The larger the amount of serum, the larger the proportion of subjects reacting.

2. Most patients react somewhere between the fifth and ninth day, although the reaction may occur as early as the first and as late as the seventeenth day, perhaps even later. The time of reaction has no relation to the dosage.

3. The rash may be erythematous or urticarial. The larger the dose, the greater is the proportion of urticarial rashes. Vesicular urticaria is sometimes, though rarely, seen.

4. Nausea and vomiting occur in about 1 out of 5 of the reacting patients, and they are more likely to occur, and to be more severe and prolonged, if the dose of serum is proportionately large.

5. Albuminuria and edema occur occasionally, either together or independently.

6. Joint symptoms are observed in about 14 percent of reacting cases, and may be severe.

7. When administering a given amount of serum in two or more doses, the reaction does not seem less likely to occur than if given in one injection.

TETANUS IN THE GREAT WAR

According to A. T. MacConkey (*British Med. Jour.*, Dec. 11, 1915, p. 849), tetanus has been a good deal more frequent during the present war than in previous contests. He has collected statistics showing that, in the Crimean War, the cases of tetanus among the wounded numbered 0.15 percent; in the American Civil War, 0.2 percent; in the Russo-Turkish War, 0.12 percent; while during the present war it has reached the high point of 0.65 percent.

Tetanus antitoxin is being very extensively used, to prevent the disease, and war experience has confirmed the pre-war conclusion that from 500 to 1000 United States tetanus-antitoxin units is a sufficient prophylactic dose for the majority of injuries, provided

it is given early. In severe wounds, it is advisable to repeat this dose once or twice at intervals of a week.

RESUSCITATION FROM GAS ASPHYXIA, USING RED BLOOD-CELLS

Considerable newspaper publicity has been given during the last few weeks to a method of resuscitating victims of illuminating-gas asphyxia devised by Dr. W. H. Burmeister, of Chicago, who gives his method and a record of the animal experimentation upon which it is based in *The Journal of the American Medical Association* (Jan. 15, p. 164). This new method is based upon an effort to restore to the blood a vehicle that has the oxygen-carrying power of the normal hemoglobin—the latter being destroyed or impaired by the carbon monoxide of the gas.

The oxygen-carrier provided consists of carefully collected and preserved erythrocytes, or red blood-cells. Its value was determined by a series of experiments made with rabbits and dogs, and the blood-cells were obtained by bleeding the animals from the femoral artery directly into a sterile flask containing sodium-citrate solution in water; the sodium citrate being used to prevent coagulation. This was obtained in the following way:

This blood was received directly into a sterile flask which contained 25 Cc. of a 10-percent sodium-citrate solution in water. The blood was allowed to flow in until the flask contained 250 Cc. of blood-citrate mixture. To this, was then added 250 Cc. of sterile Ringer's solution containing 2.5 percent of dextrose. After gently mixing the contents by oscillating, the flask was placed in the dark at + 4 C. until the time of its transfusion. The bottle and its contents were centrifuged just before transfusion and the supernatant fluid, together with the layer of white corpuscles, was removed. This left, usually, 125 to 150 Cc. of a rather thick erythrocyte suspension. In this manner, dogs' corpuscles were kept three or four weeks, without any gross or microscopic evidence of deterioration being evident.

We shall not attempt to give the complete details of Doctor Burmeister's experiments, but he showed that dogs which had been exposed in closed compartments to gas-fumes for 60 to 90 minutes, or until respiration had ceased and in some instances the heart stopped beating, could be revived with this treatment. Immediately upon removal from this chamber, the heart's action was started again (if it had

already stopped) by thoracic massage. If it could not be made to beat again, it was useless to proceed further.

Meanwhile, artificial inflation and deflation of the lungs was practiced, and the external jugular vein was laid bare with a small incision and a small glass cannula introduced, this being equipped with a rubber tube attachment which could be fitted to a large Luer syringe. The erythrocyte suspension already described, previously warmed to 37° C. and fortified by the addition of one Cc. of a 1 : 1000 epinephrin solution, was now injected into the carotid; about 100 Cc. of blood being allowed to flow from an incision in the vein peripheral to the point of injection.

Fifteen dogs, in which the transfusion was begun before the heart had ceased to pulsate lived. Five control-dogs, in which it was possible to secure return of cardiac and respiratory activity, died within two to four minutes after temporary resuscitation, while four other control-animals, injected intravenously with Ringer's dextrose-solution and epinephrin instead of the erythrocyte mixture, died within from three to five minutes.

Doctor Burmeister is convinced of the value of this method of resuscitation and advises the establishment of emergency stations where human erythrocytes are available for injection, just as pulmotor-stations are now maintained. In view of the large number of lives sacrificed every year through illuminating-gas asphyxia, the suggestion has much to commend it.

QUININE AS AN ANTISEPTIC IN BATTLE WOUNDS

Dr. Kenneth Taylor, of the American Ambulance at Neuilly, Paris, reports to *The British Medical Journal*, December 25, 1915 (p. 923), his experience with quinine-hydrochloride solution as a dressing for infected wounds. The advantages claimed for this alkaloidal salt are, that quinine hydrochloride has very high bactericidal properties *in vitro*, especially marked in the case of the bacillus *aerogenes capsulatus* (the cause of gas-gangrene), against which it is ten times more effective than carbolic acid. When used, it reduced the mortality from experimental gangrene in guinea-pigs, from 100 to 41 percent.

Furthermore, this quinine salt has a strong antiferment action *in vitro*, preventing the digestion of proteins, and the consequent production of a medium favorable for bacterial growth; also, its activity is not greatly

reduced in the presence of serum or pus; it is practically nonirritating when applied in effective concentration to exposed tissues; it is nontoxic when used in adequate dosage; its cost is not prohibitive; and it presents no difficulties of preparation and does not alter its composition on standing.

When used clinically, a 1-percent quinine-hydrochloride solution is used as a wet dressing or for instillation. In some 12 cases, it was used in a 1-10-percent solution (with the addition of 1-10 percent of hydrochloric acid or 1 percent of alcohol) as a continuous drip.

About 125 cases of infected wounds were treated in the American Ambulance with one of these solutions, the majority being fresh wounds, and the patients usually being received at the hospital within forty-eight hours after injury. Many of these patients were infected with the gas-bacillus, staphylococci, and streptococci, the usual flora of putrefactive bacteria being also present in all. About half of them had open fractures of long bones of the arms or legs. Doctor Taylor says that most of the cases treated with the quinine solution have run very favorable courses.

SCARLET-FEVER IN THE FRENCH ARMY

The Paris correspondent of *The Lancet* (Jan. 15, p. 149) writes that scarlet-fever is one of the infectious diseases that has claimed a considerable number of victims in France during the present campaign. Professor Chantemesse has laid before the French Academy of Medicine the excellent results obtained by the employment of methods based on those recommended by Milne. The throats of scarlet-fever patients were painted with a 10-percent carbolized oil, at 3-hour intervals, day and night for the first forty-eight hours, and then twice a day for another week. For children, the strength of the oil was reduced. At the same time, the whole body was rubbed with the eucalyptus-oil, as so strongly advised by Milne.

The eucalyptus-oil treatment has been referred to from time to time in CLINICAL MEDICINE. Employed in association with saturation with calcium sulphide, careful attention to the alimentary canal, and control of temperature by means of small doses of aconitine, properly guarded, this measure undoubtedly possesses many advantages.

By treating the throat with the carbolized oil, there is no doubt that the spread of the disease can be limited, since it is now generally

recognized that scarlet-fever is transmitted mainly by the secretions of the nose and throat.

"GERMAN" MEASLES

The horrors of war have been added to by another wordy controversy in English medical journals. Correspondents of *The Lancet* and of *The British Medical Journal* are urging the dropping of the specific term "German" in connection with measles, as a designation for rubella! However, one ingenious correspondent endeavors to justify the use of the adjective "German," by explaining that "germaine" is the word that properly should be used; the assumption being that German measles is "germaine to" ordinary measles. It is to laugh!

It has been a long time since anyone has contributed anything to CLINICAL MEDICINE "germaine" to German measles. Who will volunteer for the next step?

HEXAMETHYLENAMINE TREATMENT OF INFANTILE PARALYSIS

In his very fine paper upon infantile paralysis—a paper in which special attention is paid to the operation of tendon transplantation—R. Tunstall Taylor (*N. Y. Med. Jour.*, Jan. 29, p. 193) properly emphasizes the importance of early treatment of the febrile stage, in order to forestall or limit the later-occurring paralytic symptoms. Among other things, he advocates alkaline antiseptic sprays for the nose and pharynx; thorough elimination with calomel, castor-oil, and enemata; hot wet-packs, to stimulate the action of the skin; free drinking of water, to encourage urinary elimination; proctoclysis by means of the Murphy method, to promote the same end; cold compresses or ice-caps to the head; counterirritation over the spine with tincture of iodine or mustard; and, finally, the internal administration of hexamethylenamine in doses of 1 to 2 grains every two hours, for the first three days, as first recommended by Cushing and Crowe, of Baltimore. While the value of the latter remedy is somewhat questionable, there is sufficient evidence to warrant its routine use, although Fraser and Anderson seem to doubt its utility.

On theoretic grounds, hexamethylenamine should be serviceable if given at the initial stage of infantile paralysis. The difficulty is, to determine the nature of the disease sufficiently early, since the onset is sudden and its character rarely recognized until

paralysis is established. However, in doubtful cases, the drug should certainly be given a trial.

May we venture to suggest another remedy? We refer to calcium sulphide. Older readers of CLINICAL MEDICINE will remember the fine paper upon this subject contributed by Southwick to our June, 1913, issue, page 482. He used calcium sulphide both as a curative and a prophylactic agent, with most excellent results. When infantile paralysis is even feebly epidemic in a community, saturation with calcium sulphide, and possibly the conjoint use of hexamethylenamine in moderate doses, is certainly worthy of trial.

THE EFFECT OF THE PROLONGED USE OF PITUITARY EXTRACT

The only effect from the prolonged use of pituitary extract, taken by mouth, was found to be, J. H. Musser (*Nouv. Reméd.*; cf. *Ther. Monatsk.*, 1915, p. 219), to consist in a moderate influence upon the peripheral blood-vessels; this action persisting for a certain time after omission of the medication.

DEATHS FROM WILD ANIMALS AND SNAKES IN INDIA

We learn from a recent number of *The Lancet* (Jan. 15, p. 141) that 1745 persons were killed by wild animals in British India during the last year, this being an increase of 9 percent over the previous year. Tigers were responsible for the taking of 646 lives, one man-eater alone having caused 289 deaths in a single district.

The number of lives lost by snakebite amounted to 22,894, an increase of 1124 over the figures of the previous year. Here, the echis viper was the greatest source of danger, and special measures to exterminate this reptile have been adopted.

POSSIBLE EARLY SIGN OF LEUKEMIA:

In a case of severe pyemic infection, H. Pribram observed (*Deut. Arch. f. Klin. Med.*; cf. *Wien. Med. Woch.*, No. 9, col. 436), as a short transient feature, a blood-picture entirely like that exhibited in myeloid leukemia. It is conceivable, Pribram conjectures, that conditions of this kind represent the initial stages of a leukemia, when a predisposition to hemic disorders obtains. If so, this fact might prove of value in studying leukemia in its earliest stage.

Miscellaneous Articles

Current Comment By a Country Doctor

THE Rising Sun of Surgery.—The practitioner who can glance up and read upon his bit of "wall-paper"—by now getting a bit brown with age—that he is qualified to practice medicine *in all its branches*, including surgery, can no longer really consider himself a "surgeon;" not unless he has specialized in that branch. Even if he has done quite a bit in that line of work, such as repairing traumas to the extent of saving divers lacerated digits and limbs and, perhaps, occasionally making an impromptu armed descent upon the abdomen—taking out, say, enough gut to make a fair-sized sausage, with a classic V-shaped accompaniment of mesentery, and then becoming tensely occupied with a Murphy button or, if one be not available, uniting ends with a Lambert suture—one no longer can consider himself a surgeon, in the present acceptance of the term.

The up-to-date surgeon has technical skill in anatomical and pathological manipulation that places him in a class all by himself. There is no "going right down to the peritoneum and then being mighty careful" in the today surgeon's work. This is admitted by said up-to-date surgeon himself, also cheerfully and admiringly by others. And not one word of criticism of the surgeon is here intended; not even the hackneyed howl anent supposedly needless surgery is here reiterated. However, with all admiration for the rising sun of transcendent surgical proficiency, a few predictions as to the future of surgery will be hazarded.

The coming world, I am convinced, will see curative and preventive medicine so developed that eventually there will be relatively little need of surgery, nor danger of a supposititious epidemic of fee-splitting (against which frightful evil this and other sovereign states are now protected by statutory enactment); and, with the disappearance of all but a few representatives of our profession, the surgeon will go first, next the internist, and, lastly, there will remain the Doctor of Preventive Medicine—doctor, ac-

ording to its original meaning—teacher. How?

Mankind soon will be wise enough to stop turning loose the mighty powers of nature in destruction; thus war will pass away.

The pursuits of peace will be rendered free from danger by safeguarding the machinery used in the coming era. Thus shall we eliminate the most fruitful sources of surgical necessity; then will follow "natural causes."

Man is going to breed out the necessity for orthopedic surgery by proper environment and education of the human animal. Lastly, education will largely do away with acquired disease, while the internist will recognize and cure in its incipency whatever remains. The wrong will be detected in its stage of mere local disturbance of metabolic equilibrium. In other words, because of the increased efficiency of the diagnostician and internist, disease will be nipped in the bud—immediate examination of the sick as well as prophylactic examination of the supposedly healthy being made at stated intervals. In fact, the latter already is a feature of preventive medicine attempted by various life-insurance organizations.

What about the exanthemata, cancer, and so on? Give preventive medicine a bit more chance and sufficient backing, by awakening society, and all these chronic ails will be chased to where Yellow Yohn and others have gone or are fast going.

Phytolacca. — Poke - root grows along hedges and in waste places throughout the United States, providing the soil be sufficiently rich for their sustenance. Quick-growing and conspicuous, as it is, nature evidently is trying to call attention to its exceeding usefulness to man as an agent alleviative of disease.

Someone has characterized *phytolacca* as "the vegetable iodide of potassium." With the growing disrepute of KI as a sort of alterative cure-all, and the simultaneous recognition of other, better combinations in

which to introduce into the human system, the useful halogen (calx iodata for one), this comparison is probably a slander on good old poke-root; although, indeed, ash analysis does show the high potassium content of about 4.2 percent.

Phytolacca (now conveniently available in the form of phytolaccoid) is possibly the most generally indicated of all drugs in disorders involving the lymphatic system. Given the hardened and enlarged glands, a pallid mucosa, often showing vivid redness and removal of epithelium in patches, the tongue, while not heavily coated, covered with glary mucilaginous-looking material—and the first thought in the meeting of specific indications will be, to the expert clinician, phytolaccoid. Sometimes, in acute conditions, calx iodata is properly exhibited in alternation with the concentrate.

The most emphatic call for phytolacca is in enlarged cervical and mammary glands, when the use of this drug by inunction will, at times, work almost those "wonders" we so often see written about. Incorporation of the drug with lanolin insures its being carried in, while the required gentle massage accompanying it is not without certain merit. Help from this source can often be obtained in the treatment of early-stage buboes, regardless of their specific origin.

It must always be remembered that the specific action of phytolaccoid is exerted in aiding the lymphatic system and that, especially in chronic diseases showing glandular manifestations, agents calculated to augment leucocytosis and end-product elimination (such as echinacea and irisoid or other drugs of choice), are emphatically called for. Briefly, the phytolacca-thought is always connected with overtaxed glands, whether in acute or chronic conditions. This is a remedy of clear indications, but, like others, will fall into immediate disrepute with any user who expects it to reach beyond those specific signs.

Even in the treatment of glands that have become permanently enlarged, whether of classic neoplastic character or not, many observers claim splendid results. Other glands will certainly be aided, at least in doing the excess work thrown upon them, and the worth of the drug as a remedial adjunct in those forms of goiter not having excessive hypertrophied interstitial tissue is attested by many. A place, in connection with dietetic régime and proper exercise, is also legitimately to be accorded to phytolaccoid in the treatment of obesity.

Phytolacca is rather slow of elimination so that a reasonable degree of caution against cumulative effect—causing delayed emesis and, according to some authorities a depressant effect upon the heart's action—is to be looked out for. However, the reasonable dose is perfectly safe, care being taken to give the remedy at sufficiently long intervals to avoid cumulative effect. It is the writer's custom to prescribe phytolacca, in chronic conditions, three times a day or every three hours. In acute diseases, it may be pushed to effect, giving by mouth, and also in conjunction with inunction over and around the involved glands.

The "Fra's" Last Wish.—The wills of Elbert Hubbard and of his wife both requested that their bodies be cremated. Disposition of the organic remains of this brilliant exponent of individualism and the consummate master of rhetoric became, owing to the exigencies of marine warfare, a matter for piscatorial consideration; still, the making public of his desire will aid the cause of the believers in hygienic and rational disposition of the dead.

Knowing the laws of physics and chemistry, even to the extent that we do, it is difficult to take an affirmative side in the argument against cremation of the dead as a duty to the living. Why argue in favor of slow disintegration of organic matter, when it has ceased to be actuated by the unknown force of personality, and when this change can be quickly made without soil pollution and danger to the living?

We take it that there is no justifiable religious ground for letting putrefaction destroy man's body: if there is, we can as well turn to the complicated discussion of the Zend-Avesta teachings at the time of the corruption of Zoroastrian precepts by magian influence—at which time a line of sophistry was worked out that resulted in Parsee substitution of buzzards and jackals for fire. The only arguments against cremation, other than those based upon precedent and illogical race custom (aside from purely religious dogma) that now come to our mind, hinge upon the difficulties to be placed in the way of future ethnologists and present-day medical students by destroying material for research. The danger of mistakenly using the ashes of one's deceased spouse for tooth-powder, as related by a recent fiction writer, is purely imaginary.

Personally, it makes little difference to us what happens finally to our body. Certainly, none of us can say. There are in existence

the former transitory habitations of rulers of the shepard-king dynasty that are being studied by archeologists and gazed at by gaping tourists. The skulls of the once mighty are measured by the student of comparative zoology; and it may have happened to the skeleton of some nameless Pharaoh, sepulchred under enough rocks to prevent coyotes from performing the perverted Zoroastrian rights of the Parsee, that a pair of medical students, instead of holding a soliloquy over its cranium, as was done by the tragedy-marked Prince of Denmark over Yorick's, got very busy in trying to locate where within had been the fissure of Rolando—thus utilizing the departed in connection with Gray's "Anatomy," to make up what are now called units, while they were spending their vacation in earning a few needed dollars by desert toil.

It may be that these students were greatly aided in their arduous search for knowledge by the custom of gathering as many rocks as were conveniently available, and time permitted, piling them over a shallow grave, then leaving, after erection of such cross, if any, as available material permitted, the duty to the passerby of crossing himself and adding one more stone to the desolate heap, in certainty of its being done.

Sometimes these students may have speculated as to whether that desert dead had been hero, horse thief or just plain searcher for free-milling ore. For the truth of the story I vouch not and claim not to know a landmark or water-hole from the Spanish Peaks to the mouth of the Yaqui River, and doubtless should take a gila monster on a mesquite-bush for a 108 Bar maverick; but, if true, it is quite possible that the bones, after serving to demonstrate tubercle and foramen, were, not without sentiment, returned to their resting-place to await further disintegration. If this was done, it is to be hoped that the desert dead was reasonable enough not to object to the little matter of lending his bones. If the gentleman was a bandit chief, perhaps he was even glad to offset some of his cussedness in life by promoting knowledge, to aid toward lessening human suffering.

Alcohol and Active-Principle Medication.—Qualified to speak either from the standpoint of physician or pharmacist, I should not have voted for exclusion of spiritus frumenti nor of spiritus vini gallici from the revised U. S. P. These articles still have a limited field of usefulness and are employed by many capable men. Any medicinal substance of recognized use should have a standard of purity; espe-

cially is this true of whisky, which requires an aging process that permits the interaction of certain aldehydic components with the higher fusel-oil alcohols, to form esters essential to the formation of a product suitable for consumption.

However, the use of alcohol in any form in medicine is constantly diminishing. I have no remembrance of having prescribed whisky, brandy or wine for a half-dozen years—and I am not ranked as a prohibitionist, either. The fact simply is, that, having other agents to accomplish the same therapeutic result, it seems illogical to load a diseased system with a substance in quantity that must be oxidized—burned up—at the expense of energy more properly to be conserved. Think of the divers complicated processes that must be undertaken to change $C_2H_5 OH$ to end-products of elimination, at the same time maintaining proper balance of reaction in the body-fluids. The primary stimulating effect (always subject to the law of reaction) is by shock activity, set up through an effort to throw off an irritating molecular combination; and such stimulation can be obtained by other means.

The tendency of modern practice is, to minimize even the amount of alcohol used as a solvent and preservative in the menstrua employed. Use of the active principles has in no small way contributed to the gradual, but certain, decline of the prescribing of alcohol in medicine. The trend toward the use of the indicated remedy in the smallest and most potent available bulk has, perhaps unconsciously, helped much toward the possible final cutting down of the use of alcohol to the sterilizing of the hypodermic syringe. Even for this purpose, however, it should be used carefully. When employing an alcohol-sterilized syringe, be sure to rinse out the instrument with sterilized water before employing it for administration of the animal products put up with physiologic salt solution, *especially when giving pituitrin*.

As a beverage, alcohol is simply being pushed out. It is considered a lessening factor in modern efficiency and as a social institution is looked upon with increasing disfavor. The change in the public opinion anent drinking by the doctor has been so marked in the past very few years that he had best not even drink the new baby's health, after sitting up all night awaiting its arrival. It just will not do as a business proposition, regardless of the possible belief of the physician himself that he can oxidize a bit of booze without harm or even with

direct benefit. Potation is simply a thing of the past, and any benefits to be derived by returning to beliefs of the past are, if any, so negligible as to be unworthy the effort toward replacing Old Man Booze in his former good standing. The old man had a long vogue, extending from fermented cocanut-juice to champagne and blind-tiger corn-trouble potentiality, but his day is about done. This statement is not made by a prohibitionist, if you please, but by an observer of evolutionary progress, one who has never believed in forced prohibition propaganda, so often conducted at the expense of the general issue of educational human progress.

A. L. NOURSE.

Sawyerville, Ala.

ANOTHER HARRISON LAW PROBLEM

Mr. A. B. is a user of morphine. For some thoracic trouble he had several ribs resected on the right side, and has to wear a drainage tube all the time. He is also tuberculous.

He went to two different places for treatment and they tried to cure him of the addiction, but he could not stand the treatment. They gave it up and sent him home, telling him he would have to use a certain amount of morphine, and he is now using 1 1-2 to 2 grains, 3 times daily. When he cuts it down to 2 grains a day his cough starts up and exhausts him. He always calls on me to treat him, and what I want to know is whether I can furnish him the amount of morphine he requires with directions how to take it.

"H."

Indiana.

[Frankly, doctor, I don't know. This whole question is now traversing the dangerous passage between the Scylla of official interpretation on the one hand and the Charybdis of judicial decision on the other. As we understand Treasury Decision 2200, the physician must not prescribe (or presumably dispense) the narcotic drugs "in a quantity more than is apparently necessary to meet the immediate needs of a patient in the ordinary case," the only exceptions being that the physician supplying an addict with an opiate must show "decreasing dosage or reduction of quantity prescribed from time to time," while if the patient is suffering from a chronic or incurable disease, "prescriptions might show an ascending dosage or increased quantity." In which class would you place this patient?

On the other hand, Judge McCall, of the United States District Court, Western District of Tennessee, has ruled (case of United States vs. Friedman) that "there is no limit fixed to the amount of said drugs that a physician may prescribe, nor is there any duty imposed upon him, other than to keep a record of all such drugs dispensed by him, and the name and address of the patient, except those to whom he may personally administer, and that he must preserve the records for a period of two years." This decision may be reviewed by the United States Supreme Court. We have not heard whether it has been appealed or not—but the Government usually appeals when it loses.

Our advice to the doctor would be to supply this patient with (or prescribe for him) the smallest amount of narcotic possible, and make a strenuous effort to cure him. Have another physician see him with you, in consultation, and between you decide on the course best for the man, then follow it faithfully. Keep your records scrupulously, entering in your Record Book the exact reasons why the opiate was provided in any unusually large dosage. Under no circumstances permit yourself to be classed as a "purveyor" of a narcotic for an improper purpose, and never give the opiate to any third party, or intermediary. Finally, do your very best to follow the Commissioner's rulings strictly and to the letter—but be human and humane.—ED.]

HARDSHIPS THE HARRISON LAW MAY BRING

We, here in Michigan, have just received our first visit from the inspector under the Harrison antinarcotic law. No one seemed to understand exactly what to do and what not to do so as to comply with the law as officially interpreted; however, according to the explanations given out by this inspector at these visits, it becomes manifest that every physician is at his mercy—and more so, probably in the rural districts than in the cities. Let me briefly repeat a few of the rulings as explained to us:

Supposing a physician is traveling or is driving out in the country and he is taken sick with cholera morbus, maybe in the middle of the night, while for some reason no other physician can be reached, and under these circumstances this sick doctor should dispense for himself an opiate. In doing this he is violating the law.

Or, if under similar conditions this doctor's horse becomes sick and he knows that an

opiate or some other narcotic will give relief, at least until he can reach home or some place where he can call help, if he gives the drug he violates the law.

Likewise, if he should meet a patron or neighbor on the road stalled with a sick horse, and he provides a narcotic for temporary relief he again violates the law. He may be in a locality where there is no veterinarian within ten miles or more.

I have been practicing medicine since 1871, and it seems strange that physicians should be treated like this, with no honorable standing, and placed at the mercy of an inspector who *may* be a good sensible man, but also, who may be one who is determined upon hewing straight to the line of the letter of the law, irrespective of sense or justice. He may be swayed by politics or his opinion of different schools may influence him; even personal prejudice may control. Such a law gives such men a splendid opportunity, if they be so inclined, to make a world of trouble.

We who dispense drugs must account for all narcotic drugs. If you should meet with some accident and happen to break any of your narcotic bottles in your case, will the inspector accept your explanation or will he report so much of your stock not accounted for? *You do not know.* A bottle of anethaine stood on my desk. I was preparing to use some of the anesthetic, when a playful kitten jumped on the case and brushed the bottle off, spilling the entire contents. What will the inspector report?

I appeal to you, readers of CLINICAL MEDICINE, to come forward and point out a way of relief. I realize that the law is good in a great many respects; but, cannot the objectionable features be removed? Someone must be trusted and considered honorable, and do you not think that physicians, as a class, are honorable men? Much more can be said about the great wrongs this law can inflict upon us, as well as upon the sick, but I think I have said enough to show you the points I wish to make. I am hoping you can give us some light.

"R."

Michigan.

[The possibilities of prosecution, or persecution, under the Harrison law presented by our Michigan brother are correctly stated. It is perfectly true that it is illegal for a physician to prescribe or dispense a narcotic drug for himself, even in case of emergency; and he can not legally give such a drug to a sick animal or supply it to a layman for that

purpose, no matter how remote he may be from a registered veterinarian. The writer has a relative who, with his family, is taking up a claim in the woods of northern Minnesota. In case of sickness he is compelled to go or send over thirty miles to a physician—and he has two or three hundred neighbors in the same predicament. Heretofore I have supplied this family with simple remedies for coughs, diarrhea, neuralgia, painful injuries, and other emergencies, but now I may not do this, both because the federal narcotic law forbids and because "poisons" are now ruled to be unmailable by the postmaster general, and also because it is illegal for them to have these pain relievers in their possession.

Of course it is not likely that the officers of the government will make any trouble for a doctor who is going about his business in a proper way. Indeed, Dr. Henry B. Hemenway, who recently rendered a report on the federal narcotic law to the Council of the Chicago Medical Society, stated that he had been assured by those in charge of the enforcement of the law in this city, that they would not make trouble for any reputable physician, their sole aim being to reach the quacks and the crooks. But in a sense that only makes the situation more serious, for it is an admission that it is illegal for a physician to do something that is admitted to be morally right—indeed, a duty; that there is one kind of law for one class of men and another kind for another class; that practically all physicians have been transferred technically to the lawbreaking class; that their transgression may be and will be winked at, if they are in good standing; and that the profession, almost as a whole, is at the mercy of the opinions, whims, personal grudges or prejudices of the secret agents of the government. And this reminds me of a statement I recently heard made, anent the rapidly growing system of government supervision over the lives, habits, and business of our people, that "if all the laws were enforced half of us would be in jail and the rest of us out on bail!"

We believe in the Harrison narcotic law; but we do not believe in extending its application to such a point as to make it inquisitorial, tyrannous, and inhumane. It is tending strongly toward that extreme, if we are to accept the interpretations placed upon it as final. But must they be final? In our opinion the result rests largely with the medical profession. Read the two other letters upon this law which we are printing

in this issue, and then tell us what *you* think should be done.—Ed.]

THE TREATMENT OF NARCOTIC ADDICTS—WITHOUT VIOLATING THE LAW

I would appreciate your opinion regarding prescriptions for narcotic drugs given by a country physician. As you well know, the older country physicians used too much morphine for the relief of pain, resulting in the creation of many addicts among the older people. Many have taken the drug for long periods and are still able to get prescriptions from nearly any physician whenever they please. Our physicians have known them for many years and try to induce them to take treatment to effect a cure. Some try, but without avail.

Many of these patients are not in good health, and are also poor, and there are no free institutions in this vicinity to my knowledge. I keep reducing the dose when able, and I think we are all anxious to obey the meaning of the Harrison law, not only on account of the penalty of the law, but for the good of the law and because we appreciate its good intention.

I hope you may be able to offer some suggestions. Must we reduce the dose to keep within the law?

"B"

New Hampshire.

[Inasmuch as our New Hampshire friend's predicament is identical with that experienced by many other physicians—as we know because we have received many letters covering exactly this ground—we endeavored to secure from the Commissioner of Internal Revenue, at Washington, an opinion as to the course to be adopted by physicians called upon to care for narcotic addicts. We accordingly wrote the Commissioner the following letter:

I am enclosing herewith copy of a letter just received from a New Hampshire doctor. I am omitting his name, because presumably the letter was written to me in confidence. However, this is one of quite a number of letters received from men who are experiencing exactly the same difficulty referred to in this communication.

In other words, it is practically impossible in a very large percentage of instances, especially in country practice and particularly among the poor who are compelled to make a living, to show a "decreasing dosage or reduction of the quantity prescribed from time to time" in treating narcotic addicts, as required by T. D. 2200.

For the benefit of the medical profession, some twenty-five thousand of whom we reach through

CLINICAL MEDICINE, I shall appreciate it very much if you will tell me what I shall tell these men.

We received the following reply from the Commissioner's office:

Replying to your letter of January 17th, enclosing a copy of a communication received from a physician enquiring as to the quantity of narcotic drug that may be dispensed or prescribed to patients who are addicted to their use and who live in the country, you are advised that Treasury Decision No. 2200 to which you refer indicates what is expected by the Government; to show the good faith of physicians in disposing of narcotic drugs through prescription or otherwise. As it is practically impossible to effect a cure by placing in the hands of a drug addict an unlimited supply of narcotics, unless a physician reduces the dosage in successive prescriptions, the intents and purposes of the Harrison Narcotic Law would be violated.

There is enclosed for your information a copy of an opinion rendered by a United States District Judge which very accurately defines what is expected of physicians registered under this law.

Respectfully,

L. L. SPEER,
Deputy Commissioner.

The pamphlet sent us by Mr. Speer was a copy of the decision of Judge Sater of the District Court of the United States, Southern District of Ohio, Eastern Division, in the case of *Tucker and Robinson vs. Williamson*, Collector of Internal Revenue. This decision has to do with the business of two physicians (*Tucker and Robinson*), licensed as such under the law, who were engaged in the manufacture and mail-order sale of a well-known remedy for the treatment of catarrh, containing a small amount of cocaine, to-wit, *Tucker's Catarrh Cure*. The whole argument deals with the legitimacy or illegitimacy of mail-order practice, and so far as we can discover, from a careful perusal, it seems to interest the general practitioner only in so far as it deals with the problem of "personal attendance," as defined in the Harrison Narcotic Law. We confess that we are unable to see the slightest analogy between the case of these vendors of a cocaine-containing catarrh remedy, sold to the laity, and that of our New Hampshire friend and the hundreds of other legitimate practitioners who are in a quandary as to what they shall do when called upon to supply the actual needs of unfortunate people who are victims of a narcotic addiction.

We do not wish to be placed in the attitude of criticising Mr. Speer unduly, knowing the difficulties of the position which he holds, but I am sure that any physician who reads Mr. Speer's letter, especially that portion of it referring to the "placing in the hands of a drug addict an unlimited supply of narcotics, unless a physician reduces the dosage in suc-

cessive prescriptions," will agree with the writer that Mr. Speer knows very little about drug addicts and still less about the practice of medicine. Personally, the writer has never met a physician who even suggested, much less advised, the desirability of placing in the hands of a drug addict "an unlimited supply of narcotics."

What doctors want to know is how to provide legitimately for the actual needs of these poor people. They are not criminals, they are not infectious, and they can rarely be cured off hand, by reducing the dosage of the narcotics "in successive prescriptions." In spite of Mr. Speer's letter, we are still seeking light.

In this connection we advise a careful reading of the comment upon the preceding letter, which really deals with the same problem, although from another angle.—Ed.]

IT'S ONLY THE GRIP

Anent Dr. Musgrove's comments on "two kinds of colds," in the January *CLINICAL MEDICINE*, p. 69, Tyson, in his "Practice of Medicine," p. 132, says: "In the epidemic (of grip) of 1893-94, gastric catarrh was frequent, producing nausea and vomiting, and adding greatly to the physical weakness. Severe vomiting may even usher in the attack."

This is in keeping with the instruction given by Doctor Sloan, of Kansas City, who classifies grip under three headings: (1) Catarrhal—respiratory tract; (2) nervous—afflicting any portion of the nervous system; and (3) alimentary.

For a number of years in practice I saw only the first and second classes, and was beginning to doubt there being a third; but the last two or three years, and especially during the present epidemic, I have been thoroughly converted, having seen the "alimentary" form with all its variations.

I have seen so many cases of sore, swollen liver and gallbladder, almost invariably accompanied by slight jaundice, that I can scarcely believe it a coincidence. These cases are usually secondary to or a sequel of the catarrhal form.

I have also seen a number of cases of heart involvement as a sequel, including palpitation, irregularities, and even distinct murmurs, which I can trace directly to an attack of grip, probably as a toxic result.

If people realized the seriousness of this disease, and would consult a physician at once, and follow instructions implicitly, they would escape these end-results, which

are usually out of all proportion to the original trouble.

As dominant treatment, nothing has given me as much satisfaction in the catarrhal forms as calx iodata and calcium sulphide; and I should not consider it malpractice to use these two remedies all through all acute forms.

L. J. COBERLY.

Oakesdale, Wash.

[The alimentary type of grip has been known for many years and has frequently been described. That there is such a disease, clinically speaking, is admitted by everyone. The only open question is as to whether this disease is a true influenza—that is caused by the influenza bacillus—or not. Now that these winter ailments are receiving close bacteriologic study we are learning some strange things. For instance, A. J. Hinkelman, in an article on "The Bacteriology of the So-Called Intestinal Influenza," (*Illinois Medical Journal*, Nov. 1915) showed that in one epidemic of this disease presenting the typical symptoms, the stools of the patients were well filled with the bacillus of winter cholera, which cultural and animal experiments seemed to show was the cause of the disease in this instance. Whether this microorganism always causes the alimentary type of influenza or not, of course we cannot say. Time will doubtless tell.

One of the most interesting features of the grip epidemic of this winter is the comparatively small part played by the influenza bacillus in its production. In the middle west this organism was certainly a minor factor, but it seems to have had more of an influence in the East—in New York, for instance. Generally speaking, the pneumococci and streptococci have had the stellar roles this season, and this explains the severity of the type and the exceptionally high mortality. The streptococci are probably responsible for the numerous instances of cardiac involvement.

As to treatment, Doctor Coberly strikes the proper note—although we advise resort to bacterin treatment as adjuvant to drug treatment. Given early, a pneumococcus-streptococcus bacterin will modify the course of the disease very decidedly.—Ed.]

OBSTETRICAL AIDS

I use H-M-C and pituitrin in every case of obstetrics. If I see the patient early and she

is having an excruciatingly painful dilation of the cervix I give a tablet of the combination by mouth, when usually in a few hours the cervix will be well dilated. Then I give a tablet of H-M-C No. 2 and 1 Cc. of pituitrin together, hypodermically, and in about twenty or thirty minutes, and many times earlier, it is all over with, and just a little whiff of chloroform as the head sweeps the perineum, labor is completed from one end to the other, with little pain comparatively, and the mother goes to sleep and sleeps for several hours.

A bit of advice: To keep a gentle horse from running away, I give a teaspoonful of fluid extract of ergot after the placenta, as pituitrin action does not persist very long.

I. R. FOWLER.

Louisville, Ky.

ARE YOU LOOKING FOR A LOCATION?

Dr. U. G. Vance, La Fontaine, Indiana, writes that he knows of locations for three or four good physicians. If you are interested, write the doctor; be sure, however, to enclose a stamped self-addressed envelope for reply.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

The twenty-eighth semiannual meeting of the Medical Society of the Missouri Valley will be held in St. Joseph, Missouri, Thursday and Friday, March 23 and 24. The scientific program will include some twenty-five papers, besides two public orations to be given by men prominent in the profession.

It is believed that this meeting will prove a very attractive one, and a cordial invitation is extended to all physicians residing in nearby states. The March number of *The Medical Herald* will present the full program. If you are interested, write to Dr. Charles Wood Fassett, St. Joseph, Missouri, who is the secretary of the society.

DRUGS AND DRUG-ACTION

I have just been reading the very thoughtful and suggestive editorials in the January number of your excellent journal. How is it possible that you can think out so many good things? You know that I myself once edited a medical journal, but never could I have made a tenth of the pregnant suggestions such as you present month after month. Just now, though, I wish to single out the

article titled "Cardiac Stimulants," which is capital; but so is that on lobelia and its alkaloids.

Both of these articles (as well as many other papers published), all of which show an exhaustive study of drug-action, recall an article, which I wrote nearly twenty years ago, on "the primary and secondary action of drugs," in which I proved that all the drugs that had been carefully studied seem to be capable of exerting opposite actions, according as the dose is large or small. I began by citing this generalization from Stillé's great work, his "Therapeutics and Materia Medica," as follows: "There is also a primary and a secondary operation of medicines; sometimes the one and sometimes the other is curative." Then I drew largely from H. C. Wood's copious material, and finally quoted from Lauder Brunton's elaborate work on pharmacology this pertinent statement: "This opposite action of large and small doses seems to be the basis of truth on which the doctrine of homeopathy is founded;" after which he proceeded to expose some of the fallacies of that system.

Dr. Samuel G. Dixon, the celebrated director of health affairs in Pennsylvania, was temporarily in Atlantic City with his family and one of his children was under my care at the time that article of mine was written. I asked his judgment about publishing it, and he insisted that I send it to Lauder Brunton, in London, for *The Practitioner*, together with a personal letter from him. I did so, and the paper appeared in the April and May numbers of 1888.

Now that the profession is broader and more liberal, so that it is no longer a crime to meet a homeopathic brother in consultation, why should it not be right and entirely allowable for all of us to prescribe the smallest doses that have been shown clearly to be effective? The faults and limitations of the homeopathic system are known to all of us, but sometimes those men effect cures after we have failed; and this fact should set us to thinking. I early discovered, as Ringer also has insisted, that drop-doses of the wine of ipecac are often effective in relieving nausea, and that similar doses of tincture of cimicifuga will frequently prevent threatened abortion. In or near Philadelphia, there is living a young lady today (or was at last accounts), notwithstanding that, when her mother was pregnant with her, the latter was ordered by an experienced physician of Atlantic City to take a drug for the purpose of terminating the pregnancy, because

she had been suffering for several days from pain and uterine bleeding, and, besides, had had a like experience three or four times in previous pregnancies and efforts to prevent an abortion had failed. And her medical adviser had the support, too, of the leading authorities in obstetrics. Nevertheless, when I was consulted, I advised that before doing this she try my plan. I directed that she remain strictly at rest, and prescribed for her tincture of *cimicifuga*, which I knew had proved helpful in several such cases. She obeyed, and she went to term.

Your missionary work for minute doses of the numerous valuable alkaloids has enabled us to avail ourselves of them and thus save thousands with their help; and, has yet, left us free to rescue other thousands, in what would otherwise have been fatal emergencies, by injecting full stimulating doses of heart stimulants or tonics, and the hemostatics or appropriate vaccines.

BOARDMAN REED.

Alhambra, Calif.

[Praise from Boardman Reed is praise indeed.—Ed.]

SOME POINTERS LEARNED DURING TWENTY YEARS OF PRACTICE

When a little powdered iodoform is placed upon the root of the patient's tongue and there allowed to dissolve slowly, it will relieve the worst attack of difficult (asthmatic) breathing, irrespective of the cause of the disease. The relief occurs in a very short time, generally within five to fifteen minutes, and will last from one to six hours, when the medication may be repeated. In one instance, the relief was found to be not as marked as usual, but here the asthma was due to a serious organic heart lesion from which the patient died two days later.

For a calomel cleanout, give from 2 to 5 grains in 6 to 8 divided doses, tablets or granules, every third day, late in the evening, following with a full dose of sulphate of magnesium early next morning. During the intervening days, a saline laxative should be given in full medicinal doses night and morning. This course will cure sciatic neuralgia when many other plans have failed. In one case, I had used all the famed remedies—salicylates, blisters, electricity, rhus, and many others—over a period of two months. The plan described cured in less than ten days.

In diphtheria, especially in severe cases and while one is waiting for antitoxin to

arrive, give pilocarpine hydrochloride. I saw mention of this in *American Medicine* many years ago and I used it very successfully before the antitoxin came into use. The pilocarpine should be given hypodermically in doses ranging from 1-48 to 1-24 grain, according to the age of the patient and severity of the attack, repeating every ten or twelve hours, unless the symptoms abate. Of course, one must not neglect antiseptic local treatment, to stop absorption of toxins from this source.

In this connection, I want to call attention to the value of gelsemium as a remedy for paralysis, either local or general, following diphtheria. A reliable preparation of the drug should be secured. Gelseminine hydrobromide, 1-250 grain, given every two hours, for a child 6 or 8 years old, will meet the indications.

To relieve neuralgic pains in any part of the body, as well as pains due to various causes, try the local use of guaiacol. For facial neuralgia, rub in 5 to 10 drops over the site of the pain; you will be surprised to see how quickly it disappears. The same drug will often remove muscular pains of a rheumatic nature. In fact, I believe that, provided any given pain can be relieved by local applications, guaiacol will do this, no matter what the cause. I have used it with good effect in toothache and earache, applying it to side of face and the temple. Pain and tenderness over the area of the ovaries can be relieved in the same way.

To render black hairs on a woman's face translucent and, thus, less noticeable, they should be treated with peroxide of hydrogen. The solution should be diluted with an equal volume of water when beginning the treatment and then the strength gradually increased as the treatment proceeds. You often meet young ladies whose upper lips are covered with fine dark hair which makes them rather conspicuous and causes them much worry. It would almost be an impossibility to remove these hairs by means of electrolysis, and this should not be thought of when the foregoing simple treatment can be applied. The remedy should be used freely and often. This remedy exerts a retarding influence upon the growth of these superfluous hairs, and many of them fall out if it is applied perseveringly.

To abort or to break up a cold, I know of no remedy so valuable as potassium dichromate. It is well borne by the aged and weak persons. It may be administered at any stage of the attack and will demonstrate

its curative powers. When fever is present give aconitine in conjunction with it, each seemingly enhancing the action of the other. Potassium dichromate is especially indicated in grip and tonsillitis, when the throat and tonsils appear raw and angry. The same is true for croup and capillary bronchitis. In treating a cold or grip, if the remedy is pushed and other essential things are done—not neglecting the “clean-up”—you will not have to wrestle with prolonged prostration or drawn-out recovery.

About one year ago, I accidentally discovered that sulphide of calcium acts very decidedly as an anaphrodisiac. It was being administered to a young man who was suffering from pustular acne. He was also suffering from a rundown condition, which he said was due to frequent nightly emissions. It was not long before his condition was very much improved. One day I mentioned that his general condition had improved also, and he said it was no wonder, for he had not had a bad dream for weeks. From this time I began to prescribe it for this and allied conditions, and my notes show that every patient was benefited. The calcium sulphide subdues the erotic craving, and also weakens the erectile power, and, therefore, is beneficial in chordee when associated with gonorrhea, and is especially beneficial for boys who masturbate. How this therapeutic effect is brought about, I do not attempt to conjecture, because the drug is certainly an alterative and tonic, and patients are built up under its influence.

While I am speaking of calcium sulphide, I want to call attention to its value in dysentery, especially when combined with Dover's powder. Ordinarily 1 grain of the sulphide should be combined with 4 grains of Dover's powder for one dose. This amount should be given every three hours until the blood and mucus begin to disappear rapidly from the dejecta and the straining is greatly relieved; then give a dose three or four times a day, as indicated.

The foregoing combination is good treatment in all forms of gastroenteric troubles where looseness of the bowels and pain are prominent symptoms. Patients so treated not only recover rapidly, but complications are comparatively rare.

Here are some indications for ergot other than those in which it is generally prescribed. According to my experience, we have in the drug one of our best tonics for the entire arterial and capillary system, in all passive or sluggish conditions. It should always be combined with the indicated heart tonic in

the very beginning of those diseases that engorge the circulation.

The indication for ergot is exactly opposite to that for the use of the bromides. The latter are indicated where there are a fast circulation, excitement, and an excess of nervous energy; patients are restless, talkative, and can not keep quiet. In the condition calling for ergot, the patient may suffer, but is benumbed and overcome. The circulatory system is deranged, the portal circulation is overcrowded, the organs become more and more crowded with blood (which is poorly oxygenated), their functions are more and more deranged, until the whole system is suffering from autotoxemia; and a tedious convalescence is the result.

Ergot will be found a remedy of precision in capillary bronchitis, pneumonia, malaria, grip, continued fevers, congestion of the pelvic organs, and in all conditions with the above indications. Small doses of ergot will also relieve the headache of flabby-tissued persons. The brain is congested in many of the diseased conditions enumerated above, and ergot restores the arterial tone there as well as elsewhere. Under the influence of ergot, the cells of that organ are no longer inundated and paralyzed by excess of blood: the circulation being restored, the brain is able to shake off lethargy and torpor, and can then assume command of the body-forces.

C. W. CANAN.

Orkney Springs, Va.

BLOODY DIARRHEA AND TYPHOID FEVER

Case 1. A woman past 50 years had been constipated from youth until after she was 25 years of age, when periodical diarrhea came on, which continued for fifteen years. Every one to three weeks a profuse diarrhea would set in and continue for several days, whatever the treatment; the passages consisting of a profuse yellowish liquid. Ten years ago, she fell into my hands, and I placed her on an antiseptic and tonic course, whereupon the spells were greatly lessened and her general health improved, until after the climacteric three or four years ago, when they again became worse—more frequent and bloody, even fresh blood (about an ounce) at times being voided after stools.

Last fall—September 25 to 28—I gave her three hypodermic injections of emetine hydrochloride and she has not passed any blood since. However, on November 2, she had a serious attack of watery diarrhea,

followed by cramps in the legs and arms so severe that I had to give her H-M-C and strychnine injections to control them. There occurred a large number of passages of watery feces—but not any blood—something that had not happened before for years. Here certainly there was a pronounced victory for emetine in preventing bleeding. This is not dysentery, but ulceration of the colon.

Case 2. A boy 15 years of age was taken with typhoid fever on September 29, his temperature continuing to range between 103° and 104° F. until the 26th of October, when it gradually fell, until til the 16th of November, when it reached 97 degrees. The morning and evening temperature seldom varied more than 1 degree. A positive Widal reaction was secured on October 10. This was the most uniform, highest and longest persisting temperature I ever saw.

The patient had a clean tongue and flat belly the whole time. He was deaf during most of October and November; he was delirious and picked the bed clothes for a week, from November 15 to 23, but recovered under a course of the sulphocarbolates and echinacea. I have found that echinacea will prevent a dry, cracked, sordes-covered tongue. Get that last idea before your readers.

THOS. W. MUSGROVE,

Sultan, Wash.

[Thanks for "that last idea," doctor, and for all the suggestions contained in your letter.—Ed.]

EMETINE IN EPISTAXIS

At 11 a. m. December 11, last, I was called to see Mrs. Wesley, colored, age 76. She had bled profusely, but the hemorrhage had ceased before my arrival. Was called again at 9:30 p. m. the same day, and the hemorrhage was so free that I plugged the anterior nares; which checked it at once. I then gave 1 grain of emetine, hypodermically. No more hemorrhage occurred until December 12, at 8 p. m. I then gave another similar dose of emetine. The patient was icy cold and the arterial circulation very feeble, so, I combined 1-4 grain of morphine sulphate and 1-150 grain of atropine sulphate with the emetine, giving all at one dose (hypodermically). This treatment, or nature or something else checked the hemorrhage, after I had plugged the anterior and posterior nares. I then put the patient on 1-100-grain doses of atropine sulphate, internally, every three

hours, and by 7:30 p. m. there had been no return of the hemorrhage.

This report is incomplete and of no value, but I reported it to the Mississippi County Medical Society on December 13, and they suggested adrenalin locally, together with packing the entire nares with gauze, bismuth subnitrate to be incorporated into the gauze.

Packing the posterior nares (with poor light and ignorant assistants) is not the funniest thing I ever did, especially if you are satisfied that a funeral is at hand if you do not hurry up.

In a long series of mean cases, I do not know of anything more trying than watching a patient's life go out through hemorrhage. Fortunately, I have not met this kind of case. Luckily, or by some providential intervention, my cases of hemorrhage have never succumbed (to hemorrhage alone), and only one case through traumatism, incident to forceps delivery. I reported this latter case and was ripped up the back by critics.

Describing the best way to check hemorrhage from the nose, uterus, and lungs would help some poor doctor out of a peck of trouble, especially if given correctly by someone who knows how. (Don't all write at once!)

W. P. HOWLE.

Charleston, Mo.

EMETINE IN HEMOPTYSIS IN CHEST WOUNDS

The New York Medical Journal gives an excellent abstract of an article by Dupont and Troisier in *Bulletins et memoires de la Societe medicale des hopitaux de Paris*, November 27, 1914, who report three cases of penetrating rifle-bullet wounds of the thorax, followed by hemoptysis, in which emetine was used with results apparently as satisfactory as those already reported by other observers when this drug was used in the treatment of tuberculous pulmonary hemorrhage.

In the first case, with a wound at the base of the left lung, arterial blood was being abundantly expectorated upon admission, and the man was dyspneic and oppressed, and presented signs of a slight hemothorax. The condition persisting throughout the night in spite of the dressing applied, a subcutaneous injection of 2-3 grain of emetine hydrochloride was given. In the afternoon the bloody expectoration showed marked reduction, and in the succeeding night ceased almost completely. A week later, the patient was discharged in excellent condition.

In a second similar case, a single injection

of emetine was also followed in a few hours by cessation of bloody expectoration.

In the third case, that of a man wounded a week before, bloody expectoration had been continuous, and auscultation revealed a tendency to consolidation of the lower portions of the lungs, with crepitant rales. After an initial injection, the bloody sputa were reduced from fifty a day to ten, and after the second, entirely disappeared.

The authors would not hesitate, in severe cases, to administer initial doses of 1-4 or even 1-2 grains of emetine. That the benefit afforded by the drug is permanent was shown in that, after the period of improvement following injections, a return of hemorrhage through secondary vasodilatation did not occur in any instance.

THE HARRISON ANTINARCOTIC LAW— IMPORTANT

Several months ago, Treasury Decision 2244, requiring physicians and others ordering narcotic compounds to designate on their official order the quantity of narcotic contained in each tablet or pill, or fluid or avoirdupois ounce, was (as our readers know) temporarily suspended by the government. At the time, we advised all our readers to conform to this ruling, pending final decision. The wisdom of this advice has been shown by the final decision of the government to enforce this ruling, beginning on May 1. Thereafter every physician ordering any narcotic mixture or compound *must* designate on his order blank the quantity of the narcotic contained in each tablet or ounce of the mixture. Do not forget this. We advise immediate compliance with the regulation, so as to get the habit of making those orders correctly, and to avoid subsequent delays.

EMETINE TREATMENT OF TYPHOID FEVER

I am especially interested in the treatment of typhoid fever with emetine, which I have used with success in two cases. I gave 1-2 grain night and morning for five days, or in all ten doses, when the temperature came down from 104° F. to normal and remained so until convalescence was complete. That is the best I have ever seen done in forty years' practice. If anyone thinks it won't work, try it. Begin early.

Let the good work go on.

H. H. SMITH.

Lexington, Ohio

[We have received from Doctor Frazier, who first advocated the emetine treatment of typhoid fever—in *The Medical Record*—a very interesting article upon this subject. We hope to print this paper next month.—Ed.]

KEEP FRIENDS WITH THE MIDWIFE

At the request of my friend Dr. Geo. C. Howard, president of the Monongahela Valley Dental Society, I submit the following experience of mine with midwives—or, as they are called among the lay folk, granny-women—and with it the photographs of two prominent ladies of "auld lang syne." The larger one of the two, on the right, is Aunt Betty Wiles, who was present at the birth of Doctor Howard's father, sixty-one years ago. The other, Mrs. Emma Cool, was also prominent in her day.



Two Old-Time Midwives

I will not attempt to report all of my associations with the old ladies, as it would occupy too much space, but will speak only of Aunt Susan W., whose home is in Monongahela County. By permission, I will also venture to give what I consider some wholesome advice to all practicing physicians, both young and old, relative to their treatment of these old granny-women, should they ever be thrown into association with any of them.

In the first place, let me say, do not treat the midwife with contempt or criticize her in any manner, but, rather, meet her with a kindly smile and a hand shake; make her believe that you have confidence in her, whether you really have or not. It will be good round dollars in your pocket. For, I assure you, every granny-woman in the land has hosts of friends who believe in her and will not hesitate one moment to take up the cudgel in her behalf. Now to my story:

Some forty years ago, I located, for the practice of my profession, at a small village in upper Monongahela County, West Virginia. The hamlet consisted of a hewn-log church, school house, store, smithy, corn-mill, and about eight or ten dwellings. The inhabitants (as a rule) were rough old-time folk, and withal of a generous and very sociable disposition; and certainly I never suspected that anyone would think of opposing my starting practice in the place. However, I soon found out differently.

One old gentleman in particular, Uncle Billy V., and Aunt Susan W., the midwife, were the hardest propositions I had to contend with. Uncle Billy said: "Begad, it will never do for a doctor to come here. Just look, there hasn't been any sickness here for a long time, and now, if this infernal doctor comes, it will be no time afore we'll all be down sick." Right here I will say, though, that in the end Uncle Billy became one of my best friends, after having rendered him a favor that helped to save him considerable money.

My other opponent, Aunt Susan W., sallied forth and tongue-lashed me wonderfully. I made up my mind to pay no attention to her attacks and to treat her with respect, speak to her when I met her, and for the rest bide my time; for, I was confident that the opportunity would appear when I could lift Aunty from off her high pedestal and let her down to the sphere of ordinary mortals.

Sure enough, ere long the psychical moment presented itself—and it was thuswise. One very dark and murky night, sometime after midnight, there was a rap at my door, and, dressing hurriedly I there found a messenger, who implored: "Doctor, for God's sake, come quick to David A., on Days Run; his wife is near to death." The woman, he told me, was in the throes of childbirth, but was making no headway. Aunt Susan W., he continued, had been there for two days, and was up a stump. She had them send for Doctor S., up near the Pennsylvania line, but, when he came the evening before, he was "as

drunk as a biled owl," "and he is now lying under the bed, with his feet sticking out from under it."

I hurriedly got out my horse and followed the messenger. When we arrived, I found pandemonium, with the house full of women and Aunt Susan with an I-wish-to-gosh-almighty-that-I hadn't-come-here expression on her countenance.

After taking in the situation, I spoke kindly to Aunt Susan and asked what seemed to be wrong, and her answer was: "Go, see for yourself; I think it is either a leg or an arm hanging out, I am not sure which." I saw that something had to be done quickly; so I prepared myself, made an examination, and found the child's left arm protruding, the cord prolapsed, and absence of pulsation. I then told the husband and the others of the mob that the child was dead.

Proceeding to complete delivery, I asked for some hot water, clean towels, "and you, Aunt S.," I said, "I want to help me at this job." Then, as a precaution I loaded my hypodermic syringe with 30 drops of fluid extract of ergot. Having made all preparations, I drew forth a small vial of chloroform.

And then panic came—every blessed woman left the room, and Aunt Susan was about to vamoose, too. However, I managed to coax her to stay. Then I showed the husband how to administer the chloroform, after the woman had come partly under its influence.

Now I just went after those feet, and had no difficulty in bringing them down at once. I do not think it took me more than eight minutes to deliver the child, all parts being well relaxed. There being no uterine contraction, I injected some of the ergot under the skin of her abdomen, and it wasn't long before contractions set in and the membranes were expelled entire. The runaway women then all come back, and Aunt S.'s star of glory had started on its downward course toward the horizon. However, I made a few remarks to the gaping assemblage of neighbors, and told them that, unfortunately, the books which Aunt Susan had studied did not describe this particular kind of childbirth labor. You can rest assured that this speech in her behalf pleased Aunty wonderfully and this made her a lifelong friend of mine. Afterwards I privately sent her cases, when advisable; for, my obstetrical practice after this took a marvelous jump.

The case of Mrs. A., terminated favorably, and I had the pleasure of attending her in confinement two years subsequent to this

trouble. Her husband was highly pleased, and he remarked that he wished now that he had employed me in the other case in the very start of her labor.

Do not ignore the old granny-women.

As to the alkaloids, I will state here that I almost swear by them and that, if any physician will prescribe them and use them as they should be used, he will get results. I am growing old and soon shall be obliged to retire from active work, but always I shall proclaim: Success to the alkaloidal preparations.

W. L. McLANE.

West Union, W. Va.

"NONSURGICAL" TREATMENT OF CANCER

There can be little doubt about the correctness of many claims that certain forms of external cancer have been cured by methods said to be "non-surgical" but that were immediately and effectively destructive. To distinguish these methods from mere pow-wow I have pointed out that they are themselves really surgical, though not the kind of surgery that the crusaders too often mean—excision with the knife. I emphasized in my paper the particular reason why attempts at excision are unwise in this variety of fiercely growing cells. This reason may be restated as follows: The victim of any form of cancer is undeniably a good soil for that form of malignant cell or organism and peculiarly susceptible to its reimplantation, whether this be accidentally done by the surgeon at the operation or occurs in the natural way by erosion of a vein or lymphatic vessel and the vascular transport of the graft. The knife is therefore contraindicated in cancer *unless the cancer can be removed without being wounded*.

The quacks, with their caustics and plasters, avoided this danger of operative reinfection (though not the certainty of an irritative recrudescence of remaining parts of the growth that they failed to kill) for the caustics killed the infected cells in their habitat more or less thoroughly. No doubt many small epitheliomas have been successfully destroyed by them. The weakness of the method was its slowness, painfulness, and particularly its lack of directibility, by which all edges of larger growths could be surely destroyed, for these caustics are but partly selective in their action on cancer tissue and the operator could not assist in the dirigibility.

The special advantage of the newer physical measure, destructive ionization, and to a less

extent thermic surgery, is that this dirigibility is assured, the operator placing the needles in positions to include all of the growth in the destructive action. The intensity of the action being within perfect control, the ionization method permits pushing the action to a final result in growths of any size in from fifteen to thirty minutes, under local or general anesthesia, thus making the treatment painless, as well as bloodless and safe from the dangers of reimplantation.

Of course, all local methods fail actually to cure a patient in whom delay has permitted the formation of internal grafts by erosion and transport, but these newer physical methods can be shown to present better statistics than the excision surgery in cases placed under them prior to metastasis. Ionic destruction, for instance, had been applied by me in 329 cases (counting all, whether metastatic or nonmetastatic) during the twenty-two years ending in July, 1915, with 147 cures, the oldest cured patient living having been treated seventeen years ago. One hundred and nineteen of these were classed as having been operable by the knife and primary growths. Under this method 105 were cured, or 88.2 percent. Two hundred and ten were either recurrent after knife operations or classed as inoperable; of these 42 were cured under the method. All cases except the smallest epitheliomas, were microscopically verified by competent pathologists.

We need all the agitation possible in favor of early destruction of cancerous growths owing to the terrible dangers from metastasis following delay, but we need also a franker examination of the value of our classical methods of prompt treatment before we can make a convincing appeal to our patients to seek treatment early.

G. BETTON MASSEY.

Philadelphia, Pa.

[This is a personal letter from Doctor Massey, which we print because the matter is of such vital importance to many of our readers.—ED.]

CANCER PASTES, AND HOW TO USE THEM

In a letter received some time ago from Dr. J. E. Tibbins, of Beech Creek, Pennsylvania he wrote: "If any of the readers of CLINICAL MEDICINE are interested in the painless operation for the cure of external cancer and will enclose a pittance to pay for printing I will mail them the technic of the operation. If

they will follow directions and have the courage to go to the bottom and destroy all malignant cells, they will be more than pleased with the treatment. Not less than 40,000 people died of cancer in the United States in the last year. My experience in the treatment of cancer leads me to believe that 80 percent of the cancers that people are afflicted with are external, and that these are purely local for a time ranging from six months to a year, or even longer. If these growths are destroyed early, while yet local, a cure can be effected in nearly every instance of cancer of the skin."

Oldtime readers of *THE CLINIC* will remember Doctor Tibbins' article upon skin-cancer, which appeared in *THE CLINIC* in 1912.

It must be understood, of course, that, while we are glad to give this information to our readers, we must not be assumed to endorse the treatment advised. We do think it worthy of investigation, however, and see no good reason why the information offered should not be considered carefully by any reputable practitioner. However, we want to give these warnings regarding the paste-treatment:

1. Do not undertake it unless you understand the technic thoroughly.

2. Do not use it at all in cases which seem to be peculiarly malignant and in which the disease is spreading rapidly. A little loss of time may mean the loss of life. Refer the patient promptly to a competent surgeon.

3. The same advice holds true when large areas of skin are affected or when the cancer is close to a vital spot. We repeat—Do not temporize.

Now, with that warning, we hope many of our readers will take advantage of Dr. Tibbins' kind offer.

VITAL TRUTH NEVER LOITERS: POSITIVE THERAPY UPHELD IN MEXICO. SMALLPOX

Singular coincidence! *CLINICAL MEDICINE*, *The Journal of the American Medical Association*, *The British Medical Journal*, and *Paris Médical* all came in the same bundle today. Strange fellowship! Yet, the remorseless tidal wave of truth magnetizes and bears them onward to the same common haven—improved medicine—where all must commune, *nolens volens*, clinicians and journalists.

Frequently I have been denominated a shameless renegade of a Paul from the regular galenic faith—possibly a just epithet. The

why and how of it all is being told almost every month in *CLINICAL MEDICINE* better than I could write it now, were repetition in order. The tense strain the weird shadows of hostile conflict flung upon the faculties of else lethargic memory cast about me a halo of spurring impulse favorable to the writing of the old story.

Now I view with inexpressible admiration the towering majesty of the immortal mind heroically struggling to sustain the waning faith nobly worth a better cause. The startling triumphs of magic chemistry and the eloquent laudations it forces from the inspired brain of masterful literary talent hold one spell-bound under a luring influence, ample to mislead the very elect.

The strange jumble of mail matter came early by water, in a drenching norther, rendering streams impassable, holding me indoors without other caller (an occasion of solitude for twenty-four hours before unknown in my-career) provoked a favorable train of disjointed thought of many things past or mayhap to come in our vague intangible medical realm.

Immaculate chemistry and coordinate dispensing pharmacy forge, link by link, what is subtly designed to become the irrefragable chain of medical slavery—too much discussed among you to require more than passing reference by me. I feel qualified for ordinary criticism of current literature; and I have spread out today before me some of the best among high-grade magazine articles—stray copies of which occasionally have passed the censor—and impartially compared them with compositions of medical-journal advertisements, and find magazine articles sadly in the lurch. The chemicals thus boosted are mostly of triumph grade when leaving the laboratories. Yet in every liquid-package, not too intensely alcoholic to decompose, the depreciation (however slightly and slowly while under manufacturing care) certainly starts at once, and proceeds more rapidly after being sent out into the channels of regular trade. Especially in climates of high temperature the process becomes destructive in a degree that neither the prescriber nor the dispenser would dream of.

Few clinicians have had the chemical training and the extensive and varied physiological experience that have been mine. Truly, the majority relegate such niceties to the pharmacist and the trained nurse. Give me the tincture of aconite, for a high-grade demonstration, and I will tell you in ninety minutes of probation in perilous fever the

degree of inferiority, compared with the active principle of the same drug.

Do you, or can you, thus protect your desperate patients, my brothers of ethical elegance? Scientific manufacture of granules and tablets of active principles indefinitely guarantees security against deterioration, if vials are properly corked. I have granules of all ages, from forty years down to my October shipment in 1915, all of equally unabated activity—extreme scarcity of medicines having forced me to the proof.

While pondering this delicate problem, curiosity prompted me to take down the catalogs of some leading gilt-edged chemists, which I had not consulted during the recent terrible years and was surprised to find that my good friends, Hance Brothers & White, fill 100 pages and Parke Davis & Co. 75 pages with active-principle listings. Certainly a timely wise hedging against the inroads the new dispensation encroaches on the long and well-defended battlements of regular galenics. And, doubtless, they produce sterling substances, some of which I have found equal to any of the same I have been using. Burroughs, Wellcome & Co. have likewise developed extremely powerful products.

In normal times, I used more or less of the products of the three firms named, except that the leading active principles, in recent years have come from Doctor Abbott's institution, since I feel it a duty to patronize the nerve and energy his venture required, in the face of the determined and influential opposition that assailed him, and knowing, as I know, that he was right and deserved support.

Since writing last month anent my smallpox involvement, I have been much deeper into the terrible pestilence, with unabated success, having had a heavy list of developed cases. The only change in treatment has been, to use 20 percent phenol in oil, as an application to sloughed surfaces, broken pustules, and ulcers—which is promptly soothing and assuaging to the pain, while exercising a gratifying influence to dry and heal, as well as perfectly disinfecting the patient. The 10 percent phenol in oil, as indicated in my other paper, is the remedy for nose, throat, and eye involvement. Thus combined with calcium sulphide and echinacoid internally, I have had a clean mortality bill in over 50 developed cases, save 6 peon deaths; the latter resulting from bathing and excessive eating of pork, after the actual disease danger had passed.

American doctors continue to dream of a medical Eldorado down here, with munifi-

cent promises of paying practice. Why, one of you, directly from the States, would starve here, with a big cash practice! I have ample means, yet never lived so wretchedly miserable as now I am living, there being nothing to buy, nor fowl, nor egg, nor milk, with scant supplies of blue bull-beef at a dollar a pound, and only the corn bread, and no sugar at all. I have no garden, because seed have been so long on the way that they do not sprout in this hotbed of creation.

Stay away from Mexico till you know what you are doing. There are delicate thin rays of light struggling to pierce and illuminate the ghastly gloom, but too feeble as yet to succeed.

I am inexpressibly grateful to the hundreds of brothers among you who are writing me such cheering appreciation for my humble contributions, and am pained to be unable to acknowledge each one personally—which most of you tell me you do not expect.

Many ask me questions about my noble French preceptors; and I have succeeded in securing their portraits, as nearly as possible approximating the time when I was with them, which I will send with this, leaving it to editorial discretion whether to present them as partial answers. Certainly, whatever of vital clinical interest my life-story contains was largely due to their teachings.

Those brothers among you who feel that my lapse from regular galenic practice has encouraged and aided them in any degree would like to see the generous features that once beamed their benign influence on me so intensely that it has been luminously reflected in all worthy usefulness my life has dispensed. My mind was germinated with their skeptical disaffection, whose feeble faith in the clinical merit of the medication of that age and time was focused in negation. The distressing truth was painfully confirmed in early failure down here in this fearful field, precipitating my renegade disloyalty to a delusive dispensation. Those illustrious men, who have left their footprints so indelibly set in the sands of time, have been honored and immortalized by breathing monuments and every other manifestation of grateful reverence the French fraternity could render.

ROBERT GRAY.

Pichualco, Mexico.

[The pictures referred to by Doctor Gray are those of Herard, Roger and Blache. We shall try to reproduce them in another issue

of CLINICAL MEDICINE. Next month we shall continue Doctor Gray's autobiography, which we were compelled to omit from this number on account of lack of space.—Ed.]

DOCTOR LYDSTON AND THE AMERICAN MEDICAL ASSOCIATION

There seems to be a good deal of uncertainty and misunderstanding among the profession as to precisely what Dr. G. Frank Lydston has and has not accomplished in his suit against the officers and trustees of the American Medical Association. The reports from both sides, in the public press on the one hand and in *The Journal of the American Medical Association* on the other, are very much like the newspaper reports of the war—calculated to confuse and mislead rather than to enlighten. Inasmuch as our readers are entitled to know the real facts in the case and to understand the real status of the matter, we will endeavor briefly to relate these facts and to explain this status.

It must be understood that the American Medical Association is a corporation, organized under the laws of the state of Illinois. The corporation-laws under which the Association holds its state charter require (as practically all corporation-laws do) that elections of officers and trustees shall be held within the state, and that formal notice in writing of such elections shall be sent to stockholders at least ten days before they are to be held.

However, these legal requirements, as the members are aware, have been violated apparently by the Association; for, the elections have been held in various cities throughout the country, from the Atlantic to the Pacific, and no written notices ever have been sent to members, although they are the stockholders in a corporation operating under Illinois law.

In Doctor Lydston's opinion, these irregularities in the election of officers and trustees were responsible for much of the abuse of power which he and others have for many years been charging against the governing body of the American Medical Association. Acting, therefore, upon his rights as a stockholder in the Association, he made a demand upon the state's attorney to bring *quo warranto* proceedings against the officers and trustees of the Association. The Latin phrase *quo warranto* means, "By what right?" and to institute such proceedings means, in ordinary language, that the persons involved (here, the American Medical Association officers and trustees) are cited into court to explain by

what authority they hold their respective office, and to show cause why they should not be removed and all their official acts declared illegal.

The state's attorney for Cook County (Chicago) refused to bring the proceeding, giving as his reason that there were no adequate grounds for such action. Thereupon, Doctor Lydston, brought a mandamus suit against the state's attorney, to compel him to start proceedings, as demanded, against the Association. In the lower court, Doctor Lydston lost; whereupon he appealed to the appellate court. The appellate court reversed the decision of the lower court, in a very full and explicit opinion upheld all of Doctor Lydston's contentions, and not only ordered the state's attorney to bring the *quo warranto* proceedings against the Association, but framed the issue between the contending parties. Next, the upper branch of the appellate court affirmed this decision. Then the state's attorney appealed to the supreme court of the state, asking for what is known as a writ of *certiorari*, which, in plain English, means an order for the lower courts to reopen and reconsider the case. Now, finally, the ruling of the Illinois state supreme court, recently handed down, denies the writ of *certiorari*.

The present status of the case, therefore, is that the decision of the appellate court stands. It is quite true, as the Association *Journal* points out in its January 1 number, that the supreme court rendered no decision upon the matters at issue, but simply ruled that it would not intervene in the case; but, inasmuch as the decision of the appellate court already stood in Lydston's favor, this negative ruling of the supreme court really amounts to a validation of Lydston's position. It is true, further, that as *The Journal* further states, thus far the Association, as such, is not technically a party to the proceedings at all; for, up to the present time, the issue has been between Lydston and the state's attorney. That however, is a mere technical objection: Lydston's mandamus suit was intended to compel the state's attorney to sue the Association, and he—Lydston—now has a standing order on the state's attorney, bearing the validity of the highest court of the state, calling for *quo warranto* proceedings against the officials of the American Medical Association.

Nor is that all. As the matter now stands, the questions of law have been predetermined by the decision of the appellate court. All that now has to be done is, to

prove the *facts* alleged by Lydston—and the case is won.

We make no comments upon the merits of the case. It would be injudicious to comment upon a case that is still *sub judice*. But, without any prejudice on one side or the other, we may safely say that it is an issue which ought to be thrashed out and decided; and it is greatly to Doctor Lydston's credit that, absolutely alone and unassisted, at great cost to himself and in the teeth of bitter antagonism, he has succeeded in forcing the matter to a head. Whatever the final outcome of these legal proceedings, we cannot believe that the great constructive task of the Association will suffer as a result.

STATE-BOARD EXAMINATION QUESTIONS

The following are answers to questions asked in a recent California state-board examination. The questions were printed in our January issue (see page 84) and were answered in part in the February number of this journal (see page 167).

CHEMISTRY

1. Mercurous chloride, Hg_2Cl_2 .
Mercuric chloride, HgCl_2 .
Mercurous iodide, Hg_2I_2 .
Mercuric iodide, HgI_2 .
Mercurous nitrate, $\text{Hg}_2(\text{NO}_3)_2$.
 2. Hydrogen peroxide (H_2O_2), when it comes in contact with either silver oxide or finely powdered platinum, breaks up explosively into water and oxygen.
 3. Socalled "bleaching powder" is chlorinated lime, or calcium hypochlorite. It is a powerful, non-irritative antiseptic, probably by reason of its power to give up free oxygen and chlorine.
 4. Diffusion is the mixing of substances through a dialyzing membrane. The substance which passes through is known as the diffusate; that which does not pass through is known as the dialyzate.
- Osmosis is the mixing of a solution and a solute through a semi-permeable membrane in accordance with the densities of saturation on each side of the membrane. The rarer solution moves toward the denser until an isotonic condition is established.
5. Nitric acid is prepared by the action of sulphuric acid on a nitrate as follows:
 $\text{NaNO}_3 + \text{H}_2\text{SO}_4 = \text{HNO}_3 + \text{NaHSO}_4$
- It is a monobasic acid of great oxidizing power and with certain hydrogen compounds forms explosives of great force. It is extremely escharotic and corrosive, making intensely yellow wounds. Tests: It colors blue litmus red; darkens ferrous

sulphate in the presence of sulphuric acid; bleaches indigo solution.

6. Arsenic is usually found as a compound of sulphur or oxygen, sometimes with iron. It is separated from its oxide by heating with charcoal. Elementary arsenic is probably not toxic, but becomes so by oxidization. It is intensely irritant, but not corrosive, producing extensive inflammation and ulceration of the entire gastro-intestinal tract, with great pain, intense thirst and collapse. The antidote is ferric hydrate, prepared by precipitating a ferric salt of ammonium hydrate, and magnesium. This is known as the official antidote.

7. Lead poisoning may arise from drinking water or other fluid conducted through new leaden pipes or by the inhalation or absorption of white lead by those who work where it is used. It produces a metallic taste, thirst, colic, constipation, urinary suppression and gastro-enteritis. It is eliminated in the saliva and sweat. There is a peculiar blue line around the gums. The two principal antidotes are sulphate of magnesium and iodide of potassium.

8. A physiological antidote is one designed to neutralize the effect of a poison upon the body processes, e. g., opium in strychnine poisoning. A chemical antidote is designed to neutralize the poison itself into a new and harmless compound, e. g., ferric hydrate in arsenic poisoning.

9. Hydrargyrim is the name given to a group of symptoms due to excessive ingestion of mercury. Its earliest symptom is ptyalism (excessive salivation); later there is anemia, debility, ulcerated gums, fetid breath and muscular tremor. Mercury can be demonstrated in the saliva by Reinsch's test. The principal antidotes are iodide of potassium, cautiously administered, and dilute nitric acid.

10. The stomach pump is indicated in all cases of poisoning where the presence of the poison is still suspected in the stomach and where no great amount of corrosion is likely. It is contraindicated in all very corrosive poisons. Roughly speaking, therefore, one can say that the stomach pump is contraindicated in all severe acid and alkali poisonings and is indicated in all vegetable poisonings.

11. Carbolic acid is a nerve poison as well as an irritative one. It stops the heart in diastole, produces giddiness, and insensibility, and heart failure. After absorption the urine becomes dusky green and even black, due to the oxidation of hydroquinone. The urine reduces Fehling's solution. The antidotes are castor oil, olive oil and magnesia. The value of alcohol as an antidote is now being seriously questioned.

12. Phosphorus is an insidious poison, killing by means of yellow atrophy of the liver, suppression of the urine and uremia. In chronic cases there are tremors of the hand, and caries of the jaw. The treatment includes the stomach pump or copper sulphate as an emetic, which is also antidotal, and old spirits of turpentine. It is important not to give any greasy oil, as this hastens the absorption of the phosphorus.



Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

THAT ease-loving colored man who never troubled himself about subsistence, so long as his wife could get washing to do, typified one extreme view of woman as a working mechanism in the business world. At the other extreme, is that indignant reactionist who protests against woman's competition in man's domain and shrieks the sacred names of home and mother. Between the two, is a vast body of amused indifference, tintured by radicalism and spotted by militant aggression. Indifferent to both and proceeding with the calm force of an evolutionary movement, is a vast and widening stream of women workers steadily minding their own affairs, and carrying along upon its surface the flotsam of things too small to blockade its way—a Nile not “fretted by the reeds it roots not up.”

For, this movement is evolutionary—fully so as is any in nature. It is a part of that process of the suns by which the thoughts of men are being widened. The old order changeth, giving place to new, and a very high purpose is fulfilling itself in many ways. This is only one.

The last twenty years have wrought many radical rearrangements in every field of life. The alterations and improvements have come so insensibly that any sudden survey of the whole is startling. We do not cognize our own acceleration.

The discovery of radium is only a luminous pinpoint in these later heavens, but it has sufficed to reshape every working-theory in physical science. We have learned how to sail the air as ships traverse the waters. We transmit intelligence over great distances, without the aid of wires. We have bridled the energy called electricity and harnessed it to half the world's work. At a stroke, so to speak, we have done away with most of the things that used to be regarded as fixed and necessary; we have broken down the old walls, let fresh breezes into old chambered spaces, we have reconstituted, not only the manner, customs, methods, and standards of life, but in large degree have shifted the

direction and quality of life itself. Hygiene has become a science, the youngest, most vigorous and assertive of them all, with prevention for its object, and by sheer necessity has busied itself in the van of this upward-surfing tide.

In view of all these readjustments, it is useless to criticize the appearance of women as workers. They are here. They are going to stay. They are claiming their rights, and are getting them; and for two reasons. In the first place, we have passed out of the primitive theory that man is the fighter, the hunter, the one upon whom alone falls all the labor outside the family or the home; next, it has become a foolish idea to advise or to try to dominate women, in the belief that they cannot advise and manage themselves. The argument that strength and reason are masculine attributes exclusively and that intuition is the single governing process with women falls away, before the unanswerable demonstration of everyday fact, and its place is being taken by an automatic adjustment whereby these three attributes operate harmoniously both in the home and outside. Let us recognize this and deal with things as they are.

“Perhaps the restlessness of modern women, which troubles so many good souls, comes in part from the fact that they tired of getting patronizing advice from the opposite sex on matters that are peculiarly their own.

“If it be the motto of the French police to look for the woman, it would seem to be the motto of almost every one in Anglo-Saxon lands to advise the woman.

“Social standpatters condescendingly tell her what is her ‘place’ and ‘sphere.’

“Presidents and kaisers tell her her duty; which is, to bear many children.

“Bachelor college professors tell her how to economize.

“Jim Hill occasionally tells her how to keep house.

“Preachers who have imbibed wisdom by sitting at the oily feet of Mr. Rockefeller tell her how to hold her husband's affections.

"A most impressive reminder of the rapid advancement of women in positions of great business and financial responsibility is to be noted in the work of Miss Christina Arbuckle, of Brooklyn.

"Acting as administratrix of the \$37,500,000 estate left by her brother, John Arbuckle, sugar- and coffee-merchant, she is reported as handling matters with masterly skill and success.

"How many of these men who preach the doctrine of confining the 'sphere of women' to household-duties would be competent to assume such a job?"

Miss Arbuckle is a good example in this matter, but there are many others. Mrs. Charles Netcher, of Chicago, for example: Upon her husband's death, this able woman took over the management of a great and complicated business of many millions yearly. She reorganized it, broadened it out, accommodated it to the rising whorl of trade in one of the most wonderfully expansive cities on earth, and piled it up into a colossal and magnificent establishment, such as within the same twenty years would have been called a wild or impossible dream. You never hear of her. She is a worker, one of the leaders in a distinctive and strictly modern development of high significance in the domestic economy of our day. I don't say that a man could not have done the same thing. Men are doing things just like it. I merely point an argument with an instance where a woman operates the inner springs of vast and successful business actions.

Such women are at the top. They apotheosize the European wife's participation in her husband's occupations. In Germany, but more particularly in France, the woman is the man's counselor and assistant in the shop or store, making an absolute community of interest with him, without assuming headship in the firm or the family. Some great business women have developed out of that system.

England followed America closely in knocking away the old restrictions, and, next to this country, even now, shows the widest range of freedom in employment for all who wish to enter fields heretofore occupied wholly by men, in shop or office work. The spirit and effect of that emancipation are delightfully, but strikingly, shown in one of last season's most successful plays, "The Twelve-Pound Look," a domestic and social comedy

reflecting actual life and pointing the meaning and influence of woman's independence, won by unaided effort in honorable business endeavor.

Few of us stop to consider the effect of the typewriting machine, the telephone exchange, and the skyscraper. It is difficult to dissociate these in their promotion of feminine employment. The machine and the phone have become, industrially, the property of women. The skyscraper, forced toward the stars by bulging real-estate values, has operated powerfully in concentrating work and consolidating it with comfort, convenience, and hygienic surroundings.

This condition prevails in many lines, both commercial and professional. As fast as it has been found out that women can manage an office, conduct correspondence or keep accounts just as well as man can, or even better, women have been drawn into those employments and have succeeded—are succeeding—in rising degrees from year to year.

These are the lines most fully occupied. The better sort of commercial establishment comes next. Below there depends a long list calling for less mind and more muscle. In all the number of women employed is augmenting, but the department-store and the factory call most insistently for that advance in physical and moral conditions, without which the general movement itself would work out a breadth of calamity exceeding its benefits by far.

The appearance of women in office-work brought with it better sanitation. The instinctive consideration of men for women has done away with stuffy rooms, poor light and worse ventilation. The development of office-buildings on a gigantic scale has been directly influenced toward perfection in architecture and construction by this one thing more than by any other. No such building now is without its rest-room. All have conveniences that never were thought of before. Every one of them offers to women the same facilities and comforts that accompany life in the home as fully as office occupations permit. The result is shown in a marked effect upon the health of men as of women. It has demanded, and made possible, careful sanitation. It has been the cause of the universal introduction of highly perfected sanitary appliances that have raised the general health averages of many cities.

The packing together of enough people of both sexes to equal the population of a sizable country town, keeping them within four walls and under one roof, is attended now by positive hygienic advantage to all, which established custom in the office routine of business in its present forms has practically done away with that taint of prurience that accompanied the first large advent of women in business-life.

These women have shown ample ability to take care of themselves in every way. They originate in various social strata, and, aside from their occupation, cannot be assigned to any special class; but, I should say that fully one-half their number is fairly educated and of good antecedents—say the upper middle class. They have brought a new and valuable element into the business of the country. They have, moreover, demonstrated the power of women for self sustention, and furnished a practical argument in favor of their right to vote. In that particular, they have gone vastly further than the women who do the work of horses in some parts of Europe—say, in Holland and Belgium or in the fields of France—and whose natural demand would be nearer oats than votes. Our women in business are the aristocrats of labor, broadly speaking. The demand for help lies among those in occupations of lower pay, longer hours, coarser tasks, and greater risks.

The women and girls in the great stores—the shop-girls—present a condition that cries out for correction. It is aside from the main point to state the unhappy truth that most of these establishments are informal harems. The pay is small out of all proportion to the labor involved, yet, appearances must be kept up. Arnold Bennett remarked, with admiration, that the shop-girls of New York were better dressed than any others he ever had seen. His admiration might have been qualified by pity, had he known the full truth. For them to make their absurdly small wages cover car-fare, board, lodging, and clothes—the fixed costs of mere living—is really out of the question. Their income must be increased from outside sources. It is common knowledge that in a frightfully large number of cases this plus is increased in that age-old way that calls for no further definition. Employment covers the wretched expedient with a cloak of outward respectability, but the pitiful fact is none the less a fact for being concealed. How far it may effect changes in the ranks, it is impossible

to say. It marks a state of helotage at bitter opposition with every prompting of freedom and decency.

Still, there are features that are directly reachable and that can be shorn of their power to do harm. Some of these are in the control of their victims, others lie at the door of the employers.

In most places where the attendants and salespeople are women or girls, they are kept on their feet from eight to ten hours every weekday. No woman can long be subjected to that physical strain and escape serious internal displacements. The abdominal cavity is capable of containing all the blood in the body. Its arrangement does not permit the telescoping process. A long fight is put up by nature to protect that arrangement, and so the blood flows from other parts into the area of conflict, until a breakdown comes. Inferior nourishment and insufficient rest meanwhile added to the damage; while when the breakdown comes it brings prolonged invalidism. Escape is open by the avenue of domestic service, but this is unanimously detested; or, it is by the other one that leads to the brief, fevered, false life of the lost.

The plight of factory-girls, of women and children employed in the manual labor of sweatshops and mills is getting adequate attention as a result of agitations mainly carried on by women of spirit, convictions, and means, who have compelled attention from lawmakers and public-health-authorities. The demand for amendment runs most powerfully in behalf of women in more genteel employments, and the answer to it must come at the hands of some one or several of the societies for industrial, physical or moral betterment.

Foremost among these associations, to my mind, is the American Society for Physical and Moral Prophylaxis. This society has been organizing a movement to stamp out just such evils, stop corruptions at their source, and generally lift the level of morality as well as of physical hygiene by bringing to bear the most enlightened knowledge furnished by modern science, backed by the sympathy of earnest men and women working together systematically. Local branches of this society are being organized throughout the land, the cooperation of physicians being especially desired, but the body of workers and counselors being drawn from non-professional life. It deserves the support of the physician

Among the Books

SECRETS OF HAPPINESS

Eight Secrets of Happiness. Edited and Published by W. A. Barnes & Co., New York. Price 50 cents.

Whatever one's conception or definition of happiness may be, in the abstract, we suppose, everyone is ready to admit that, in the concrete, it includes at least a condition of physical wellbeing. It is this phase of happiness with which the author of this little book (whose name does not appear) deals, in a simple and helpful fashion. The eight secrets are eight principles of healthy living. We do not purpose to give the secrets away. They may be yours or your clients' for fifty cents—cheap enough for such valuable secrets.

NURSES' TEXTBOOK SERIES

The Nurses' Textbook Series. *Materia Medica and Therapeutics*, by Linette A. Parker, B. Sc., R. N.; *Chemistry and Chemical Urinalysis*, by Harold L. Amoss, S. M., M. D.; *Outlines of Internal Medicine*, by Clifford Bailey Farr, A. M., M. D. Illustrated. Philadelphia and New York: Lea & Febiger. 1915.

The authors and the publishers of this series have set themselves a rather difficult task. To impart enough, yet not too much; to be generalistic, without being superficial; to give a slight knowledge of a subject, which shall at the same time be more than a smattering—this is the problem that confronts anyone who undertakes to teach medicine and its collateral branches to the nurse. And it is a problem that calls for all that one has of skill and resourcefulness, to say nothing of the faculty of getting the viewpoint of the class of persons for whom one is writing.

In the three volumes thus far issued in the series, this difficult task has been achieved with praiseworthy discrimination and judgment. Especially is this true for the volume on internal medicine, which must have been the hardest of all, in this respect, to write. Doctor Farr has known just where to draw the limitations of his subject, without making these limitations into no-thoroughfares. And

that is no small accomplishment. The same thing is true of the chemistry and the *materia medica*; but, of course, these subjects lent themselves much more readily to limitation.

Taken altogether, all three of these volumes of the nurses are excellent, practical textbooks, well adapted to that systematic instruction of nurses which of late years has happily replaced the former hap-hazard methods.

JOHNSTON'S "MEDICAL APPLIED ANATOMY": A CORRECTION

We regret that in the October number of *CLINICAL MEDICINE* (p. 980), we gave A. & C. Black as the publishers of Johnston's "Medical Applied Anatomy," also stating that the price was \$1.80. We were in error in both points: this book is published by The Macmillan Company, 64-66 Fifth Avenue, New York City, and the price is \$2.50.

FAUGHT: "LABORATORY DIAGNOSIS"

Essentials of Laboratory Diagnosis: Designed for Students and Practitioners. By Francis Ashley Faught, M. D. Fifth edition, revised. Philadelphia: The F. A. Davis Company. 1915. Price \$3.00.

The author frankly avers that his book is not intended to take the place of the many excellent and exhaustive textbooks on clinical medicine that are in the field, but, rather, to supplement them by pointing out to the busy student and practitioner simple and reliable methods by which he may obtain the desired information without incurring unnecessary expenditure of time upon difficult, tedious or untried procedures.

In this little book are presented, in concise fashion, a selection of analytical methods employed in the clinical laboratory, without burdening the student with useless, cumbersome detail; at the same time, it contains all the information necessary to provide a working-knowledge of clinical laboratory-methods for the general practitioner. Doctor Faught's experience and reputation, both as a worker and as a teacher, are sufficient guarantee of his being equal to the task.

In the present edition, the same general plan has been followed as in those preceding, although in the rearrangement accompanying the revision the author has found it necessary to eliminate, whenever possible, all discussion of clinical pathology and to confine the subject-matter more closely to laboratory technic.

HORSLEY: "BLOOD-VESSEL SURGERY"

Surgery of the Blood-Vessels. By J. Shelton Horsley, M. D. Illustrated. St. Louis: The C. V. Mosby Company. 1915. Price \$4.00.

To no department of surgical endeavor have Americans contributed so largely in recent years as to that of blood-vessel surgery. The end-to-end suturing of Murphy, the endoaneurismorrhaphy of Matas, the blood transfusion of Crile, the arterial occlusion of Halsted, and the technic of Carrel and Guthrie, all these achievements have been prominent milestones along the march of progress in this department of surgery, beside which Europe can hardly point to any equal accomplishments.

A monograph dealing with this historical aspect of the subject would be both interesting and instructive. But it is not with this side of it that the present volume deals. It is the author's aim to present the scientific and laboratory features of vascular surgery in their practical aspects, such as will be of clinical value to the surgeon and the practitioner. Consequently, the treatment of such conditions as hemorrhage (pathologic and traumatic), aneurisms, thrombosis and embolism, congenital navi, varicose veins, hemorrhoids, and the like, are discussed, with the method of suturing vessels and transfusing blood adequately explained.

A goodly portion of the volume is taken up by the original work of the author himself—for which he apologizes in the preface, but which, in the reviewer's opinion, needs neither apology nor vindication; for, to our thinking, it is exactly this feature, more than all others, that justifies this—or any other—medical monograph.

STEVENS: "PRACTICE OF MEDICINE"

A Manual of the Practice of Medicine: Prepared Especially for Students. By A. A. Stevens, A. M., M. D. Tenth edition, illustrated. Philadelphia and London: The W. B. Saunders Company. 1915. Price \$2.50.

The preceding edition of this book was issued in 1911, but the intervening years have been busy and fruitful ones in the realm of medical science; adding much to our available knowledge and resources, canceling some of our former ideas and practices, and working considerable change in this domain generally. There is scarcely a chapter in the present edition of Doctor Stevens' book that does not reflect this change in more or less marked degree; some have been entirely rewritten; a number of new ones have been added; there is hardly one that has not been enlarged and altered to conform to the advanced status of the times. The plan of the book, however, remains the same.

This is a manual of exceptional value. Doctor Stevens, himself a teacher of many years' experience, knows what is required of such a work, and has here supplied the demands. While, as its author avers, it is written especially for medical students, the practitioner also will find it useful and instructive, since he, too, often has need of information in condensed and easily findable form.

TOWNS: "HABITS THAT HANDICAP"

Habits That Handicap: The Menace of Opium, Alcohol, and Tobacco; and the Remedy. By Charles B. Towns. New York: The Century Company. 1915. Price \$1.20.

In his introduction, the author makes the rather startling statement that there are, in the United States, more victims of the drug-habit than there are of tuberculosis; and he calls attention to the fact that until very recently the world had heard practically nothing of the blameless men and women who had become drug-users as a result of illness. The fundamental principle in the remedy of this deplorable state of affairs, the author declares, is the adoption of methods which will put the entire responsibility upon the doctor. Whether one agrees with this statement and this stipulation or not, it must be admitted that there is, as Mr. Towns asserts, a woful ignorance on the part of the average physician in regard to the dangers and complications of opium administration, and also as to the nature and treatment of the drug-habit.

Mr. Towns is not a physician; but he is a man who has given great thought and investigation and attention to the subject of drug-addiction, and his statements and opinions are entitled to deep respect. As

most of our readers know, he is the joint administrator, together with Dr. Alexander Lambert, of the Towns-Lambert system of treatment. In this book are assembled, and presented in terse, forceful fashion, all of his experiences and conclusions; and they form a very powerful and valuable contribution to the subject, well worthy of the thoughtful consideration of every physician. Not the least valuable feature of the book is its constructive and practical note. It not only exposes the evil, but points the way toward remedying it.

SWANBERG: "THE INTERVERTEBRAL FORAMINA"

The Intervertebral Foramina in Man: Their Morphology and a Description of Their Contents and Adjacent Parts. By Harold Swanberg. With an Introductory Note by Professor Harris E. Santee. Chicago: The Chicago Scientific Publishing Company. 1915. Price \$1.75.

This book is a supplement to the same author's work entitled "The Intervertebral Foramen," which was published in 1913. Like that former one, it is a splendid piece of work in special anatomy, such as will appeal strongly to the neurologist and to the anatomist, and may even serve a useful purpose in the instruction of students in neural anatomy; but we doubt whether it will arouse much interest or attain much of a sale among the rank and file of practicing physicians.

Mr. Swanberg's former work was based on investigations upon lower animals; in this book he corroborates and enhances those investigations by an equally careful study of the human foramina. The most important practical significance of his work is, that the facts revealed by him will necessitate a complete restatement of the rationale of "cures" effected by spinal manipulation.

MORRIS: "TOMORROW'S TOPICS"

Tomorrow's Topics Series. By Robert T. Morris, M. D. Three Volumes: Microbes and Men; A Surgeon's Philosophy; Doctors Versus Folks. New York: Doubleday, Page & Co. 1915. Price, per volume, \$2.00.

In his preface to this series, the author tells a delightful anecdote about a respectable, conventional bachelor, yclept Jeff, who used to sit at table with Francis Dwight and himself, and listen to their speculative and philosophical discussions, and who enquired (in their absence) of a rather clever young woman

(also a mutual friend) whether these two young men were to be taken seriously, to which she replied, "Why, that all depends upon yourself, Mr. Jeff."

The anecdote is exceedingly apt. It all depends upon yourself, Mr. Reader, whether you take these reflections of Doctor Morris seriously or not. For our part, we are so delighted to find a man of ripe experience in medical practice who is disposed to philosophize at all, that we are not disposed to be critical or quizzical, but are perfectly content to lean back in our Morris chair (we could not resist the pun) and hear him talk without being too particular as to whether he is serious or in fun. Indeed, the two are inextricably mixed up in real life; how should they be otherwise in genuine philosophy?

They are delightful books. They contain the philosophy and wit of a sensitive, intuitive man who has touched elbows with life in all its phases, and has not been soured, but mellowed, in the process. There are all too few such men in the medical profession, where, one should think, they ought to grow and flower, if anywhere. In these books, Doctor Morris has builded himself a much more enduring monument than his surgical career could ever have afforded him.

MOWAT: "X-RAYS"

X-Rays, How to Produce and Interpret Them. By Harold Mowat, M. D. New York: Oxford University Press. 1915. Price \$3.00.

This book is written for those who have little or no knowledge of the subject of the x-ray, and is, therefore, very elementary. The elementary facts are stated in such a simple, straightforward, yet, comprehensive way that the student or practitioner, when he has read it through, may be able to feel that he has, at least, a good general idea of this branch of medicine.

The subject of therapeutics has not been gone into, as this is now so large as to merit a volume by itself. The chapters on the thorax and the digestive apparatus have been placed ahead of those on bones and joints, because they have received so much recent study, and the author believes that the future importance of radiography is largely bound up with them. The author asks indulgence regarding accuracy of citations, on the ground that he is at present on service, and for that reason was unable to lay his hands on books or articles under reference.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Answers to Queries

ANSWER TO QUERY 6054.—"Dysmenorrhea." Regarding the case of dysmenorrhea, discussed in Query 6054 (December, 1915), I may say that I have had scores of such patients, which medical aid would not reach, but in which, upon examination, I generally found that there was a major subluxation of the second lumbar vertebra, and a prominence of the ilium, and that that caused the trouble. By a proper adjusting of this subluxation, together with an adequate dilation of the anus—so as to keep the bowels in action—I have been able to overcome the most obstinate of these cases. I only wish I were where I could demonstrate this to you, but shall be glad to answer any questions any reader may ask.

J. McDONALD.

Jamestown, N. D.

ANSWER TO QUERY 6050.—"Mental Maldevelopment and Opothorapy." On page 1171 of your December issue, in answering Query No. 6050, you give some information about the use of pineal-gland substance in certain mental and developmental disorders. This is doubtless valuable information, even though circumstances militate very much against the use of this agent in everyday practice; for the cost is far too great and the treatment too long-drawn-out.

Your querist asks for help in the treatment of a child, twenty months old, which is apparently nearsighted, has an internal squint, and is of improper mental development. From these few facts, I would suggest that it is much more likely that this child has a pituitary disorder with, perhaps, an increased amount of granular tissue.

Naturally, it would be difficult to discover a number of the signs of this disorder in so young an infant; however, there may exist bilateral hemianopsia or even a primary optic atrophy, both of which conditions result from pituitary tumor. It is when this growth extends over the edges of the sella turcica, that there may occur pressure on the sixth cranial nerve, with consequent paralysis of the external recti muscles and internal strabismus.

Mental maldevelopment is one of the most common manifestations of hypopituitarism, and, so, your correspondent should consider the possibility of pituitary disease; for, he has mentioned several likely signs of just this condition.

As to treatment, that is very difficult; still, in any event, whole pituitary substance is much more likely to be effective here than the pineal substance. And it is not so expensive.

HENRY R. HARROWER.

Glendale, Cal.

Queries

QUERY 6175.—"Opisthotonos and Edema of Extremities." C. W. C., Virginia, presents the following clinical data and asks therapeutic suggestions.

"A man of forty-eight, sick about three years. Diagnosis, locomotor ataxia. Spent one year in hospital, leaving that institution six months ago. The present conditions for which I should like to have help are the terribly swollen lower limbs and feet, and the

severe cramps in them. His legs up to his knees are like churns, but there is also some edema above the knees. The cramps come on whenever he tries to straighten his legs, but especially at night in his sleep. Should he get both legs stretched out in his sleep, he is awakened at once by the terrible cramps. Sometimes the cramps are so bad that nothing but his heels and back of head touch the bed, and he has a terrible time before he can 'get

himself broken down,' as he terms it. The same thing occurs when he tries to walk, which he can only do with a man on each side of him. If he gets his legs a little bit too straight, he will yell with pain and go down in a heap, unless the assistants hold him. His mind is bright and he eats and digests well. Kidneys are normal, bowels slightly constipated. He sleeps like a log, except for the cramps. I have reduced the edema on several occasions by powerful elimination, but in forty-eight hours it is as bad as ever. The patient tries very, very hard to walk a few steps each day, and suffers very much while doing it. He had a professional masseur work on his legs and body for months, but no permanent improvement resulted. He denies syphilis as a cause, and blood tests have time after time proven negative.

"Now, what can be done for the edema and to relieve the cramps? Can I promise this man anything but a life of invalidism? He drank considerably between thirty and forty years of age and lived on the fat of the land."

After the most careful consideration of the clinical data presented, we are at a loss to explain the edema of the lower extremities. This symptom does not usually obtain; in fact, it is rarely observed in uncomplicated tabes; furthermore, it is unusual in this disease for the patient to suffer from opisthotonos. The cramps in the legs are not unusual, though we should hardly expect opisthotonos to occur under such conditions, and this symptom usually evidences serious involvement of the cord.

What was the early history in this case? Were the legs not edematous, would the patient have difficulty in walking; i. e., does he present the typical ataxic symptoms—inability to stand with eyes closed, and so on? Has the urine been examined recently? What is the condition of the heart? Is the area of hepatic dulness increased?

It is more than probable that the entire condition is due to overindulgence in alcohol; i. e., hematic cirrhosis. We are the more inclined to this opinion as to the alcoholic origin of the condition, as syphilis is denied and repeated Wassermann tests have been negative. Can you detect areas of anesthesia about the body? The limbs, of course, owing to the edema, would be more or less anesthetic.

It is just possible that full doses of blue mass, followed by apocynoid, might prove beneficial. On general principles, chromium sulphate might prove helpful.

The present writer usually administers rather large doses of blue mass and soda, say, blue mass and soda, 2 1-2 grains hourly for three doses at night, and a full dose of magnesium sulphate (effervescent) the next morning. He then begins with the administration of apocynoid, giving one or two tablets every two hours until watery stools are secured; in some cases, small doses of scillitin with barosmoid, 1-3 grain, may be added every four hours.

Much, of course, depends upon the condition of the kidneys themselves. It is impossible to prescribe for the cramps without knowing something more definite of their origin. Hyoscyamine or cicutine might control them. The application of hot compresses to the spine should also be tried. Also, it might be worth while to place the patient in a hot wet-pack for an hour, say, every third day.

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QUERY 6176.—"Gleet Following Double Orchitis." P. H. J., Wyoming, desires us to outline treatment for a man of forty-four who contracted gonorrhea fifteen months ago. "Last July, his right testicle became greatly inflamed and enlarged (about four or five times its natural size), which condition was cured in two weeks. Then, in December, the left testicle became affected the same way, and it was also cured in two weeks. At times, there is no discharge from the penis and at other times there is considerable mucopurulent discharge. Under calcium sulphide, methylene-blue, and potassium permanganate, the case has improved slightly but the gleet persists."

Without a much clearer idea of basal conditions, we are, unfortunately, unable to prescribe intelligently for this patient. It is probable that this man has an epididymitis. As you had to deal with a double orchitis, it is more than likely that he is permanently impotent. The present source of mucopurulent discharge must, of course, be definitely ascertained. A urethral smear should be obtained, also the urine voided on arising in the morning be secured by the three-glass method. Both the smear and the urine should be promptly forwarded to a reliable laboratory, for examination. Much might, perhaps, also be learned from examination of a specimen of the prostatic fluid, obtained by "milking" the gland per rectum.

It is, of course, difficult—indeed, practically impossible—to check the discharge unless the causative condition is recognized. If the bladder is infected, it should be irrigated;

if the deep urethra alone is involved (which is unlikely), appropriate instillations must be made. In some cases, the lacuna magna is the seat of the infection, and the discharge will persist until this pocket has been thoroughly cleansed out. The procedure for this is described in specific literature. But, judging from the general description, your patient would seem to require the services of a thoroughly equipped genitourinary specialist.

Meantime, calcium sulphide and arbutin might be given with advantage, together with hexamethylenamine, while thymol iodide solution in oil may be injected into the urethra and the rectum. However, we hesitate to recommend definitely these or any other remedies until we have a clearer idea of conditions.

When forwarding the reports of the pathologist, give us some idea of the condition of the prostate gland and seminal vesicles, as revealed by rectal examination. Is there any evidence of stricture or a hypersensitive condition of the deep urethra?

QUERY. 6177.—“Fumigating-Cones and Ribbons.” L. H. B., North Dakota, wishes to know whether it would be practicable to incorporate the ingredients generally used in fumigating-ribbon with charcoal, in such a way that it will light easily and burn slowly, thereby fumigating the air; he having in mind, principally, balsam of tolu, benzoin, cascarilla, orris-root, storax, balsam of Peru. He says that “there are various such preparations on the market, but not any of those of which I know can be used for the purpose for which I want them.”

Of course, there are any number of fumigating-powders, pastilles, and papers upon the market, most of the pastilles being cone-shaped, produced by mixing red saunders or wood-charcoal with odorous resinous substances, potassium nitrate, and mucilage. By using charcoal, black pastilles are produced, while red saunders produces the red variety. Here are some formulas that may meet your requirements:

Benzoin.....	av. ozs. 2
Cascarilla.....	av. oz. 1
Myrrh.....	av. oz. 1
Potassium nitrate.....	av. oz. 1-2
Potassium chlorate.....	grs. 60
Charcoal.....	av. ozs. 4
Oil of cloves.....	fl. dr. 1
Oil of cinnamon.....	fl. dr. 1
Oil of lavender.....	fl. dr. 1
Mucilage of tragacanth.....	sufficient.

Mix the first six ingredients, previously reduced to fine powder, add the oils, and then

incorporate enough mucilage to form a mass. Divide this into pastilles weighing about 60 grains, and dry.

Charcoal.....	av. ozs. 30
Potassium nitrate.....	av. oz. 1-2
Water.....	fl. ozs. 33
Tragacanth, powder.....	grs. 300
Tincture of benzoin.....	fl. ozs. 1 1-2
Peru balsam.....	grs. 300
Storax, crude.....	grs. 300
Tolu balsam.....	grs. 300
Oleobalsamic mixture.....	fl. drs. 2 1-2
Cumarin.....	grs. 8

Saturate the charcoal with the potassium nitrate previously dissolved in the water, then dry, reduce to powder; incorporate the tragacanth, and then the remaining ingredients. Now form a mass by the addition of sufficient mucilage of tragacanth containing 2 percent of potassium nitrate in solution, and divide into pastilles.

Thus, the pastille mass essentially consists of benzoin, charcoal, potassium nitrate, and mucilage. Any of the aromatic oils may be added. For instance, a formula in our possession names vanillin, cumarin, musk, civet, oil of rose, oil of bergamot, oil of ylang ylang, oil of rhodium, oil of sandal-wood, oil of cinnamon, oil of orris, and oil of cascarilla.

A basic formula, which you probably will find satisfactory is as follows:

Benzoin.....	av. ozs. 10
Charcoal.....	av. ozs. 24
Potassium nitrate.....	av. oz. 1
Sassafras.....	av. oz. 1
Mucilage of acacia.....	sufficient

Mix the first four (in fine powder), add the mucilage, form a mass, and make into pastilles.

To prepare fumigating-powder, mix benzoin (grs. 240), tolu gum (grs. 240), and storax (grs. 60) with alcohol (fl.ozs. 4), agitate occasionally for several days, filter, and add Peru balsam (grs. 60); oil of cinnamon (4 drops); oil of lavender flowers (4 drops).

To prepare fumigating-paper, pieces of unsized paper should be saturated with the liquid or, if for any reason powder is preferred, clean fine sawdust may be used and a tablespoonful of this scattered over a pan of live coals. As a matter of fact, fumigation is more thorough when done in this way than by using pastilles.

QUERY 6178.—“Dribbling of Urine.” R. R. H., Virginia, has a patient, a man aged fifty-five, who is troubled with dribbling of urine both night and day. He thinks that some time ago he read an article in which it was stated that rhus tox. was a specific for this disorder in women, and wonders whether this is true for men also.

If rhus toxicodendron exerts an influence upon the vesical sphincter of women, it should also do so in men; and, in fact, we have found the drug thus serviceable in many such instances, especially if combined with eupurpuroid. Thuja may be also given with advantage in many cases. Where the incontinence is of nervous origin, solanine proves useful; while hyoscyamine and hydrastoid prove curative in certain cases. However, as you will readily understand, the cause of the "leakage" must, if possible, be ascertained.

If you will give us a clearer idea of the underlying conditions and, if possible, give us a report on the patient's urine, we shall be in a position to offer more definite therapeutic suggestions.

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 QUERY 6179.—"Emetine Reaction and Pyorrhea." J. B. McC., Illinois, writes: "I am somewhat at a loss in regard to the reaction of emetine hydrochloride. I find a large scab at the point of injection and the muscles are very sore. The patients become nauseated, as a rule. The teeth show considerable improvement, but in one instance I am unable to stop the formation of pus around two teeth. In all cases, I find the teeth a trifle loose, though not enough so to render mastication uncomfortable."

It is a fact that some individuals are more susceptible to emetine than are others. However, there certainly should be no "scab at the point of injection." If you will follow the technic outlined in the brochure on pyorrhea and its treatment, mailed herewith, we think you will have no further trouble.

Be sure that the fluid is warmed to body-temperature before giving the injection, and take pains to avoid superficial (subdermal) injections. Emetine solutions must be deposited in the loose areolar tissue underlying the skin, while the more slowly the injection is made, the better it will be.

Provided the person has the tartar and other deposits properly removed, we believe the formation of pus around the teeth will cease entirely if you will instruct the patient to use peroxide of hydrogen; then, after thoroughly drying the parts with pledgets of cotton, to apply a little diluted tincture of iodine on a cotton-wrapped probe or toothpick. Then, after three or four days of such treatment, inject, with a blunt dental needle, borematine around the teeth three times a week. Have the patient use such an astringent antiseptic mouth-wash as borothyme every morning and night and before and after

each meal. A piece of gauze wrapped around the finger or the use of a rubber masseur will prove a great deal more satisfactory in such cases than a toothbrush.

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 QUERY 6180.—"Treatment of Inevitable Abortion." P., Illinois, writes: (1) "I have trouble with all my abortion-cases. Have tried a variety of expedients and remedies but these procedures do not seem satisfactory to me. What is 'good treatment' in inevitable abortion?"

(2) "A woman pregnant two months has, for the last three weeks, had severe pains continuously, but no hemorrhage. She has become very weak. What shall I do?"

It is quite impossible to cover fully the subjects of your communication. If we divide abortions into two classifications, threatened and inevitable, the question of treatment is simple. The difficulty lies in placing each case in the proper class.

In threatened abortion (not inevitable), we should endeavor to prevent the expulsion of the fetus, whereas, in an inevitable abortion, the sooner we empty the uterus, the better. But, bear in mind that an abortion can only be regarded as inevitable when so large a portion of the ovum is detached that life henceforth is impossible.

Palliative treatment naturally consists of rest in bed, in the recumbent posture, and the taking of remedies to check the hemorrhage and uterine contractions. Very small doses of morphine and atropine, in alternation with hydrastoid, sometimes prove useful. For the active treatment, we shall have to refer you to any good modern work on obstetrics.

As you will readily understand, where abortion is inevitable, the immediate removal of the ovum, preferably with the curette, is the treatment of choice; occasionally expression of the ovum is possible, but only when it is detached and the cervical canal sufficiently dilated to allow it to pass through. In such a case, of course, intrauterine interference is unnecessary. You will find this entire subject thoroughly covered in Jellett's "Manual of Midwifery" and in DeLee's "Principles and Practice of Obstetrics."

As you will readily understand, before we can prescribe for your patient, who has been pregnant two months and suffers from severe pain, we must have a clearer idea of the pelvic conditions and the cause of the pain. It is just possible that there is some malposition of the uterus or that the organ is held down by adhesions. You do not state the

exact location of the pains or their character. Is there vomiting? Has the urine been examined? Is she constipated? Make a thorough examination and give us all the light you can, together with report of findings in a specimen of the 24-hour urine. We shall then be in a position to aid you more intelligently.

If the pain persists, it strikes us that it would be well (especially if examination reveals any marked uterine or pelvic abnormality) to secure counsel. Operative interference may be necessary, but it must be remembered that some women complain very bitterly until the end of the third month.

Some time ago, a correspondent asked us whether in case of abortion it would be better to ignore the retained placenta, some temperature being present, or to remove it at once with a curette. We replied that it would be extremely bad practice to leave shreds in the uterus, and quoted from Jellett's "Manual" as follows:

"It should scarcely be necessary to condemn the expectant treatment, but, as some customs die hard, it is perhaps safer to do so. The expectant treatment was in the past usually adopted, even recommended by so great an authority as Winckle. Where part of the ovum was discharged, the physician waited until one of three things happened; i. e.: (1) the remainder of the products of conception came away, the termination devoutly hoped for, and when it occurred the advocates of the treatment pointed out how successfully they had avoided any intra-uterine interference; (2) the ovum decomposed and evidences of sepsis presented; (3) patient lost as much blood from repeated hemorrhages as was considered safe.

"If the second or third termination occurred, the uterus was emptied, but, unless they occurred, the condition was allowed to persist. The natural result of such a line of treatment is that in a certain proportion of cases the remainder of the ovum or placental debris comes away spontaneously and the patient gets well; more often, however, intrauterine decomposition occurs, and the infection extends to the tubes, pelvic peritoneum or the connective tissue, and the patient becomes a chronic invalid or succumbs to sapremic intoxication.

"Such procedures must be absolutely condemned. The proportion of cases in which interference is not required is infinitesimal, and the longer it is postponed, the more difficult it is to carry out, owing to the closure of the cervix.

"There are, it is true, some old-fashioned practitioners who allow 'nature to take its course,' because they are afraid to interfere; and it must be remembered that interference by an incompetent man decidedly increases the jeopardy of the patient."

If you can lay your hands on the October, 1915, issue of *CLINICAL MEDICINE*, see also our answer to Query 6040, "Proper Procedure in Abortion-Case." This does not deal with the medical side of the subject, but with one which is often of the greatest importance to the physician himself.

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QUERY 6181.—"Anaphylaxis." G. L. M., Texas. Concerning your request for concrete information anent anaphylaxis: as to whether there is danger of such reaction in using antidiphtheritic-serum at intervals of six weeks, in a normal person, for prophylactic purposes, or what would be considered safe intervals between injections, the following brief explanation probably will cover the points.

To begin with, anaphylaxis, in its true sense, is not of very frequent occurrence in actual clinical practice. However, we do not here refer to what is known as serum-sickness and serum-rashes; although possibly these are minor manifestations of anaphylaxis.

The characteristic feature of true anaphylaxis is essentially, a disturbance of the respiratory function or even complete respiratory failure (with, naturally, resulting death). At least, that is the principal clinical manifestation.

The attention of clinicians has been directed to this condition of anaphylaxis largely as the result of experiments with cavies—or guinea-pigs—these animals probably being the most susceptible to it. This it was that, often seeing death result from the injection of even small quantities of a foreign proteid after the experimental animals had been sensitized, led medical men to fear that the thing would occur in humans. Fortunately, experience has shown this to be very rare, at least so far as a fatal issue is concerned.

The present concentrated globulin-solutions marketed as diphtheria-antitoxin are very much less prone to give rise to serum-rashes, anaphylaxis, and other like disturbances, than was the original raw horse-serum formerly employed.

In this connection, it should be recalled that there are a large number of individuals who are possessed of a peculiar idiosyncrasy to the proteids of horse-serum; consequently,

these are the ones more likely to be unpleasantly affected. Unfortunately, it is impossible to determine this susceptibility except by actual individual experiment.

The first injection, no matter what the amount, does not produce anaphylaxis. Still, a first injection may produce a serum-rash in a highly susceptible individual; and this symptom may be—and sometimes is—rather severe. During the first ten days after an injection of a serum (or, in fact, of any foreign proteid matter), the subject becomes sensitized. But, it takes ten days for this sensitization to develop; and it does not occur in ten days after any given injection, irrespective of how many previous injections of the same serum have been given. To illustrate: A patient receives an injection of antidiphtheria-serum and this is repeated every forty-eight hours for an indefinite number of times. Since the intervals are but two days, instead of ten days, the intervening period is inadequate for the patient to become sensitized; consequently anaphylaxis does not occur—despite numerous injections. But—note well—within the period of ten days next following the cessation of the injections, the subject becomes sensitized; and now, if he receives another injection of the same kind of animal-serum, the symptoms of anaphylaxis will develop—provided he is susceptible. (The same is true for any other antitoxin, such as antitetanus, for example.) The essential thing is, that full ten days, or more, must elapse between any two injections, in order to sensitize a subject. It is not known how long this sensitization lasts; however, it is believed by some to persist for years.

In practice, it is advisable invariably to inquire definitely into a patient's history as to whether or not he has previously received any injection of an animal-serum of any kind. If so, measures should be adopted to prevent the occurrence of anaphylaxis, if such medication with serum be required. And this object can be accomplished in a number of ways; as follows:

1. Ether- or, better, alcohol-narcosis (produced by administering the agent by inhalation, internally, hypodermically or rectally) will confer a complete, although only transi-

tory immunity from anaphylaxis. This method, however, is rarely practiced, except in grave and pressing emergencies.

2. The prophylactic injection of a serum, that is, of the same kind of serum (horse-serum or whatever is to be used) that has previously been heated to 80° C., will confer a sure and lasting immunity. This immunity, however, is but slowly established, and there is usually a slight reaction to the prophylactic injection. This fact, however, renders the method impractical from a clinical standpoint.

3. The following constitutes a practical prophylactic procedure. Either give a rectal injection of a fairly large amount (say, 5 or 10 Cc.) of a similar serum, or else desensitize the patient by means of the injection of a very small dose—1 or 2 minims—followed two hours later by another small dose, of not over 10 minims. After the lapse of a few hours, the antitoxin required may then be administered.

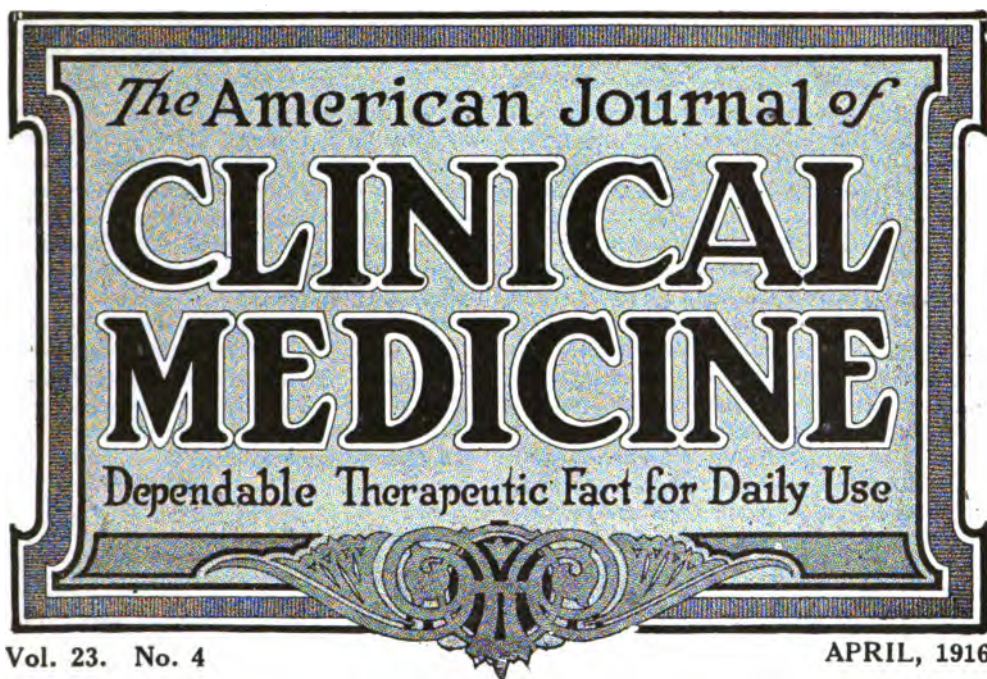
4. In emergencies, the administration of atropine, hypodermically, is considered by many as the ideal procedure, since the mydriatic alkaloid tends to counteract the respiratory difficulties of the anaphylactic condition.

Now, in answer to the second part of your inquiry, it can be said definitely that there is danger of such a reaction in giving to a normal person, for prophylactic purposes, antidiphtheria-serum at intervals of six weeks. To avoid this possibility (although not probability), prophylactic injections (repetition of the serum) should be repeated inside the stated period of ten days.

However, we would suggest that the patient be actively immunized by means of the prophylactic bacterin, if it has been found that the patient is not naturally immune to diphtheria—as many are—a fact that can be very readily determined by means of the so-called Schick reaction. If the patient is naturally immune, as demonstrated by the Schick reaction, prophylactic or other injections, of course, are entirely unnecessary.

We trust that we have made ourselves sufficiently clear; if not, it will give us pleasure to advise you further concerning any specific instance about which you may wish to inquire.





American Medicines for American Physicians

THE article by Doctor Ellingwood in the March number of this journal is one that deserves more than ordinary attention. To him drugs are realities, and by no means obsolete. His faith in them as means of combating disease and relieving human misery is unquestioning. If we realize this, and rather wistfully wish that we too had reason for such faith, we may ask ourselves what is its basis, and wherein this differs from that on which our own pessimism is founded.

To begin with, Professor Ellingwood deals with real drugs, in really effective dosage. He is not an advocate of infinitesimals, or of agencies whose actual dynamic action can not be distinguished from the suggestive influences always operating when a trusted medical adviser is in charge. So decided is the activity of some of these, that the popular view among the physicians who do not use them is, that they are too powerful for general application—as for instance, with lobelia, veratrum, aconite, and euphorbium. The objection, that the medicinal applications of these mostly originated with the Eclectics, is childish. That they are mostly of native American origin is scarcely to be held a crime just now, when the worship of the European fetish has sustained so severe a blow.

All that concerns us is whether these remedies are useful and can aid us in our work as physicians.

Doctor Ellingwood's application of drug remedies is regulated by the departures from physiologic equilibrium of function presented; in other words, he does not aim his therapeutic bullets at the malady as an entity, but at the disorder of function. Quite often, if not invariably, this is true allopathy, the remedy being administered that antagonizes the symptoms present. For instance, if the bowels act too frequently an astringent would oppose the excitation of function. This does not mean that the removal of the excitant in the bowel is not first accomplished. Perhaps a better illustration would be insomnia due to excited nervous and vascular tension, when sleep may be induced by relaxing this tension.

Is this quackish, or in any way deserving of reprobation? If so, if this principle of opposing remedies exactly to presenting disorder is "irregular," then what does "regular" medicine propose to do with its drugs? Give its remedies as specifics for diseases that are not specific?

The argument for a therapy directed against the symptom-complex presenting is,

that whatever relieves the symptoms can only do so by removing the pathologic conditions that induce the symptoms. This does not apply to a mere smothering of the outward evidences of disease by opiates, bromides, and other sedatives. Such remedies do not appear in Ellingwood's lists, nor is this his practice.

There is something inspiring in the suggestion (see page 246, March *CLINICAL MEDICINE*) that "American physicians have right here at home everything we can possibly need in the cure of the sick." That many of these have been developed by others than ourselves is accounted for: "So engrossed has this [the regular] school been in surgery, and so very much has been accomplished in this field, during the time when the knowledge of these native vegetable remedies was developing, that the larger attention has been given to the adherents of the Homeopathic and the Eclectic schools of medicine; both of these being largely therapeutic rather than surgical schools, as is the dominant school."

As to the active principles, Ellingwood calls attention to the fact that 130 of these are now recognized in the "United States Pharmacopœia" and in "New and Nonofficial Remedies"—surely a good beginning. How many regular physicians are there who utilize more than this number?

Doctor Ellingwood enumerates 62 indigestible remedies that he deems of importance, among those developed, as such, strictly in America. This writer finds 45 of these on his own list, and in use whenever they are indicated. In Ellingwood's new work ("American Materia Medica Therapeutics, and Pharmacognosy,"*) just off the press appear many more of these plant remedies; and if the fourth of what their advocates claim for them be true, there is here a wealth of resource for which we have crying need.

Therapeutics needs far more development of the means of curing sick organs, rather than more methods of extirpating them. We need exactly what Ellingwood offers, more remedies to correct disordered function before material lesions have been perpetuated.

The further progress of drug therapeutics and of preventive medicine lies in this direction. We must learn to recognize disease sooner, and to break up attacks before they are too firmly seated. The possibility of this is being recognized far more generally than it was a few years ago, when the eminent pessimists were doing their utmost to discourage the practitioner by demonstrating the absolute

impossibility of his accomplishing anything good by treatment. Nowadays we read of many typhoids being aborted in a few days by emetine, and not a voice, as yet, is raised in denial of the claims. The internist makes the same demand as the surgeon, to have his cases earlier, that he may secure better results; but when he has the case early, what is he going to do about it? Here is the need for reliable remedies of the sort suggested by Ellingwood.

We ask our readers to turn back and re-read this paper carefully, and to examine this new book. Even if you begin by looking on it as a mass of chaff, you can scarcely fail to find a few grains of good wheat among it. To us who have studied it, it is anything but chaff.

And if to be an April-fool
Is to feel contempt for iron and gold,
For the shallow fame at which most men aim—
And to turn from worldlings cruel and cold
To God in his splendor, loving and tender,
And to bask in his presence manifold—
Then by all the stars in his infinite sky,
We are April-fools, my Love and I.

—Mortimer Collins.

THE ACTION OF MEDICINES

When we read that Johns Hopkins has abolished its chair of materia medica, we wonder whether this can be because there is nothing more to be learned of drugs or whether they are so absolutely worthless that the time spent in their study is simply wasted. Probably the action was taken because nobody cared enough for the subject to attend the lectures on it. Still, in that event, one would think it might have been worth while to secure a man who could make his hour sufficiently valuable and interesting to attract the class.

Last March Frazier reported 82 cases of typhoid fever aborted by the use of emetine. Beekman undertook to ascertain how this could be, and submitted typhoid-bacilli to the serum of these patients who were emetized, but found that the bacilli grew freely in this medium. Emetine, therefore, does not exert a germicidal influence over these organisms. How, then, does this drug act in overcoming the disease and aborting its manifestations? Until such questions can be answered we should not close the book on materia medica and write *Finis* at the end of the subject. But wait—two other investigators show that the alkaloid is bactericidal, as you will see by turning to the "What Others Are Doing" department, this issue.

*Price \$5.00. Published by the author.

Here is another instance of the imperfection of our knowledge of drug action—can any reader tell us whether the dose of a vermifuge for tapeworm in a child should be the same as for an adult, or diminished according to the rules for dosing children? If the remedy is merely or properly a tenicide, it should require as much to kill the worm in a child as in an adult—but does it?

Some years ago this question was proposed, and the weight of evidence then presented favored the view that the dose should be made according to the child's age or weight. But in that case it must be that the remedial action is exerted by an influence of the remedy upon some of the patient's vital functions, and not a direct germicidal influence upon the worm.

Until such simple questions are solved, there is surely need for continued study of our drug-remedies. Let us hope that the medical mind may continue to develop until it is qualified to undertake such studies.

Happiness! How much it means! First of all, home—a home of our own, with wife and children gathering around our own fireside. There must be enough to eat, warm clothing, a few luxuries. There must be friends. The happiness may be tinctured with sorrow and seasoned with regrets, but general pain and suffering about us are incompatible with joyous living; so, in the new and happier world to which we look forward, we can not conceive of hatred, cruelty, poverty or war.

—The Medical Standard.

THE DISPOSAL OF EXCRETA

It is not very pleasant to think of drinking dishwater, and the canons of good society do not authorize partaking of garbage; nevertheless, the science of sanitation, in so far as it relates to the prevention of disease, begins and ends with the disposal of excrementitious substances. Moreover, while the discharges of domestic animals are not specially healthful and while the horse is credited with the causation of tetanus, the most dangerous substance known to the sanitarian is human excreta.

Covering the tropics and reaching far into the temperate zones, we have just been told, the ravages of the hookworm extend. From the tropics, also, come periodic invasions of the dysentery-inducing ameba. Every part of the world is subject to typhoid fever, and the territory of this disease extends rather than contracts. Each of these three scourges is due to infection from fecal discharges containing the germs of the disease. While the larvæ of the hookworm penetrate into the body through the feet, the others are taken

into the stomach with food or drink. If we could destroy the germs of these three maladies before they leave the bowels, we could soon put an end to them and thus rid the world of three of humanity's most dangerous enemies. We repeat, if we have not at present a really effective intestinal germicide, it is certainly up to us to discover one.

Meanwhile we may accomplish much by providing suitable toilets. These are especially needed on the farms, where a really sanitary privy is the exception. In rural districts, they usually are placed as near to the house as admissible, and in many instances even in proximity to the well. Throughout the southern states, there is too often no toilet at all. But even when there is one, it is, as a rule, a mere hole in the ground, too deep for the air and its salutary organisms to act upon the contents, but not deep enough to escape drainage into the well or spring.

Three devices have recently been brought to our notice, designed to meet the needs of those dwelling in isolated houses. The towns and cities are much better taken care of municipally, and are ahead of the homes in rural districts in this respect. They seem to deserve consideration.

One of these systems has received the approval of the Michigan state health-authorities and is recommended by them. It consists of a liquefying tank, from which tiled conduits carry the sewage to several points, allowing it to escape near enough to the surface to secure the disinfectant action of the air. This allows the material to be utilized as a fertilizer. It is a good system, the only objection being the cost, which, we are informed, "need not exceed \$150."

The second is an apparatus that may be placed inside the dwelling; no odor escaping from it. It also has a liquefying tank, but, instead of waiting for the slow action of the decomposing bacteria, the manufacturers claim that they have a chemical in the tank that instantly liquefies the sewage. Until we are convinced that these people have made a momentous discovery in chemistry, we must conclude that this "chemical" is caustic soda; and we doubt if this can be a safe article anywhere about a house where there are children. And what children won't do, what are the limits of their curiosity, are questions to which no answer has ever been forthcoming. The cost of this apparatus is \$53.50, plus freight. A smaller outfit supplied by the same firm is simply the pail-system, also utilizing the firm's secret chemical. The price of this is \$18.50.

The third is the system devised by Doctors Lumsden and Stokes, of the United States Public Health Service. It essentially consists of two barrels, one being the liquefying tank, the other intended to receive the overflow. Precautions are taken to prevent access of insects and to guard against odors and splashing. The total cost of this contrivance, aside from that of the superstructure—which is not considered in any of these—is less than \$5.00.

The writer has had several years' experience with the Lumsden system. If properly installed and cared for, it emits no odors, and it answers well, for example, for a summer-resort cottage. The liquefying barrel must be filled with water, and into each barrel a cup of kerosene should be poured about once a week. In about two to three months (under ordinary conditions), the second barrel will need to be emptied; and the contents may be utilized for fertilizer, provided they are deposited at a safe distance and in a direction away from the well or cistern. The soil, and consequently the water-supply, is amply protected against contamination, as not a particle of the sewage is allowed to escape from the barrels.

For the summer home or for warm latitudes, the Lumsden system is well suited; however, in cold weather, the freezing of the water will burst the barrels.

The labor of emptying the second barrel once in three months is but slight and hardly constitutes a valid objection. During the winter months, the pail-system may be employed to supplement the other, using a commode with a bucket containing freshly made whitewash, which Nuttall found most effective against the typhoid bacillus. Or, the earth-closet may be used, if preferred.

The essential parts of the Lumsden system are: two tar-barrels, costing about 50 cents each; a T-pipe, each arm a foot long and opening protected by wire netting, to exclude insects and rodents; a galvanized-iron drum, 20 inches in diameter, to rest on the first barrel and be fastened to the under side of the seat; a splashboard, to be raised to near the surface of the water when in use, and lowered afterward; suitable covers for seat and second barrel.

Where the cost is not a bar, the first-named system is preferable; otherwise the Lumsden presents many advantages. The introduction of such apparatus would not only prevent much infectious disease among farmers and country residents in general, but also keep farms from becoming foci for the dissemina-

tion of maladies, through their food-products. Here is a duty and an opportunity for the country doctor.

FALSE AND FRAUDULENT THERAPEUTIC CLAIMS

As most of our readers will remember, a little more than two years ago the federal Pure Food and Drugs act was modified and strengthened by the so-called Sherley amendment, which expressly forbade the use, on labels and circulars, of "false and fraudulent statements" relative to the therapeutic action of medicinal preparations offered for sale in interstate commerce. The constitutionality of this amendment was challenged by the manufacturer of a well-known proprietary medicine—Eckman's alternative—which was alleged to be "effective as a preventative of pneumonia," and for which the claim was also made that "it has [cured], and will cure tuberculosis." This concern, having been found guilty of making false and fraudulent claims regarding the curative properties of its "alternative," appealed its case to the Supreme Court of the United States, on the ground that the Sherley amendment was unconstitutional.

On January 10, Justice Hughes delivered an opinion, concurred in by every member of the Supreme Court, upholding the constitutionality of the Act. This opinion contains the following significant statement: "We find no ground for saying that Congress may not condemn the interstate transportation of swindling preparations, designed to cheat credulous sufferers, and make such preparations, accompanied by false and fraudulent statements, illicit with respect to interstate commerce, as well as, for example, lottery tickets."

In another place, the justice makes the following statement: "That false and fraudulent representations may be made with respect to the curative effect of substances, is obvious. It is said that the owner has a right to give his views regarding the effect of his drugs. But state of mind is itself a fact and may be a material fact, and false and fraudulent representations may be made about it; any persons who make or deal in substances or compositions alleged to be curative are in a position to have superior knowledge and may be held to good faith in their statements."

This decision is of exceeding importance, since it now definitely establishes the power of our government to prevent the sale of

fraudulent medicinal products. As a result of this decision, we may reasonably expect to see increased activity in the prosecution of patent-medicine manufacturers. Careless and extravagant statements regarding the curative action of "patents" will soon become unpopular, even with their manufacturers, since to claim too much will involve expensive and perilous litigation.

While strict enforcement of the Sherley amendment may open the way to persecutory attacks, on the whole the affirmation of its validity by the Supreme Court is bound to do great good. The man who tells the truth, the whole truth, and nothing but the truth has nothing to fear; but the man who draws the long bow when offering his wares for the cure of serious disease will learn from experience that, after all, "honesty is the best policy." If he cannot or will not learn this lesson, or if his remedies cannot stand the searching test of honest investigation, then they will be driven from the market.

"Whatever thy hand findeth to do, do it with thy might" is a precept to be accepted with discretion, according to one's strength.—Robert T. Edes.

MEDICAL TREATMENT OF INFANTILE PARALYSIS

During the past few years we have seen considerable changes in our viewpoint of poliomyelitis, for which, in great part, we are indebted to the efforts of the Rockefeller Institute, and especially to Dr. Simon Flexner, who have been doing yeoman research-work in this branch of medicine. From a practical standpoint, the net sum of these changes may be expressed in two over-head propositions:

1. The cause of the disease is now definitely determined to be a distinctive micro-organism.

2. The pathology can no longer be regarded as limited to the anterior, or motor, horns of the cord, or, indeed, to any particular part of the cord. The disease attacks the interstitial gray matter of every portion of the nervous system and also the meningeal membranes. Clinically, we recognize three forms, or types, of the disease, according to the anatomical part of the nervous system that is most severely affected, and the symptomatology which therefore predominates; namely: the encephalitic, the spinal, and the meningeal. But in each of these types all are more or less involved.

Unfortunately, the definite demonstration of the determining bacillus of the disease has

not, thus far, resulted in any equally definite biologic therapy. Flexner, to be sure, has produced a serum which, if administered during the early febrile days of the disease, before paralysis has supervened, may abort the malady and limit or prevent the subsequent paralysis. This serum, however, was elaborated before the isolation of the bacillus and cannot be said to represent any specific biological therapy. It has, moreover, the disadvantages and shortcomings of all serum-treatment. In any event, the majority of cases do not come under the physician's care until the nerve-substance is already damaged and paralysis has been established, so that the problem before him is, how to make the most of the surviving nerve-cells and muscles.

After all, in the present state of our knowledge on the subject, as Jelliffe tersely says, "the vascular lesions are particularly noticeable, and the interstitial and ganglionic changes depend very largely upon them." It is the vascular lesions, when all is said and done, which produce the symptoms and wreak the damage upon the nerve-cells. And it is, therefore, to the vascular lesions that our therapeutic measures must, for the most part, be directed.

It must, of course, be borne in mind, first, that the disease is an infectious one; and, if we have as yet no specific biologic weapon against the specific infection, we can at least lay the foundations of general systemic anti-sepsis.

Flexner has shown beyond question that the principal portal of entry for the bacillus is the nose; it is, therefore, an elementary principle of treatment that the nose and throat be thoroughly and frequently douched and swabbed (but not sprayed, for fear of spreading the infection) with antiseptic solutions, such as a 5-percent solution of phenol. Hexamethylenamine, given in fairly large doses, undoubtedly exercises a beneficial inhibitive influence upon the germs, being released by the serous membranes of the meninges in the form of formaldehyde. It must be remembered, however, that this process is dependent on the acidity of the reducing secretion, and it is, therefore, best to administer the hexamethylenamine in combination with acid sodium phosphate. Flexner's serum should be given a trial in every case where there seems to be the slightest chance of its doing good, using, of course, all the precautions which pertain to the administration of all serums. The presence of the bacillus has recently been demonstrated in the feces, which would point to

the importance of intestinal antiseptics in treatment, and of proper disposition of the stools as a measure against the spread of the disease.

He who stops short at this prophylactic treatment, however, misses his most hopeful opportunity and neglects his most effective means of influencing favorably the course of the disease and of sparing the patient much of its disastrous sequels. As we have just quoted from Jelliffe, most of the interstitial and ganglionic changes result from the vascular lesions; to which may be added that practically all of the pain results from the same pathology. The chief part of our therapy, then, should consist in a vigorous attempt to equalize circulation and to absorb the petechial hemorrhages that have already taken place into the nerve-substance.

The most elementary logic would instruct us that the rational therapeutics, in such cases, would be the same that we apply to similar conditions elsewhere in the body. The rational basis of therapeutics in inflammatory conditions is, first, derivative, then absorptive, and always eliminative therapy; and inflammations of the nervous system offer no exception to the rule. The secret of success lies in using definite, dependable remedies, and pushing them boldly, albeit intelligently, to effect.

A brisk purge of the gastrointestinal tract, by means of calomel, followed up with a saline laxative, is the first requisite. Veratrine, aconitine, and digitalin, in combination, will dilate the capillaries, slow the heart and equalize circulation in the active stages. Southwick, and others, speak highly of calcium sulphide. Cold to the head or neck and heat to the extremities will assist in the derivative process. Later, when the acute symptoms subside, ergotin and cicutine will tone up the spinal capillaries and relax the neurones. The pain usually does not call for any special treatment, being quickly relieved by the dissipation of the congestion. The pain may, however, be rendered more tolerable, while it lasts, by means of some motor antispasmodic, such as gelseminine or atropine.

Immediately upon the subsidence of the acute inflammatory symptoms, galvanism should be applied to the spinal muscles, to maintain their contractility and nourishment pending the restoration of such neurones as are destined to be restored. It must be understood, however, that galvanism (or faradism, too, for that matter) has no effect upon the restoration of the neurones themselves, and it should, therefore, be stopped

after a reasonable time (say, three or four weeks) allowed for neuronc regeneration. During the restorative period, a great deal of help may be derived from the administration of nuclein hypodermically and lecithin by the month.

It is seldom, if ever, of course, that poliomyelitis is *cured* by treatment during the active period. But it is the duty of the physician to limit, where he cannot altogether stay, the ravages of disease. And by an active, intelligent, resourceful application of therapeutic principles, abstract and concrete, to the well-defined pathology of this severe disease, he can do a great deal toward minimizing the residual paralyses and other sequels and lessening the subsequent task of the orthopedic surgeon.

It is characteristic of the really big men that they can always find time to do the things they want to do.

THE SURGICAL TREATMENT OF INFANTILE PARALYSIS

In spite of the most faithful and intelligent therapeutic treatment of poliomyelitis during its active stages, there will practically always remain a residue of paralysis and deformity, calling for the ingenuity and skill of the orthopedic surgeon. It is, obviously, beyond the range, as it is outside the function, of an editorial article to describe in detail or even to indicate in outline the surgical measures to be employed in the treatment of these cases of residual infantile paralysis; the most one can hope to do here is to point out the basic requirements of the situation, briefly state the ways in which they have hitherto been met, and call the reader's attention to one or two of the more recent innovations that have enhanced our effectiveness in dealing with them.

Up to a few years ago, the time-honored methods of treating these paralyses and deformities consisted in prescribing muscular exercises, active and passive (including electrical stimulation), mechanical supports, such as splints, casts, jackets, masts, and so on, and, as a last resort, tenotomies for the correction of irreducible deformities. And these procedures still form a considerable part of our available resources, although, of course, there have been great advances and improvements in the character and application of such devices.

The aim of all such procedures is, to afford the defective muscle-nerve mechanism its maximum efficiency, by putting it in the best-possible structural and mechanical posi-

tion to perform what function it was still capable of. And this is still regarded by most orthopedic surgeons as being the first requisite, even though it be only a preliminary to some more radical measure. However, as will plainly appear, the possibilities of all these mechanical measures are limited by the potentialities of the affected nerves and muscles themselves; they can, in short, give the muscle-nerve mechanism its maximum play, but cannot change or add to their field of function.

Within the last comparatively few years, however, two other modes of surgical treatment have been added to our resources, which break over the bounds of these limitations, and enable us to rearrange the muscle-nerve mechanism, so as to alter and extend its range of action. These two methods are, the transplantation of tendons and the transference and reimplantation of nerve-trunks; these operations being employed separately or in conjunction, as the case may be. The results attained in some instances are remarkable, even wonderful.

The principle of these two operative measures is essentially the same, namely, to cross-circuit the transmission of traction-power so as to change the direction of the resultant pull of the muscle and to furnish a defective muscle or tendon with motive-power from a source that is not defective. This is accomplished, in the one case, by crossing the transmission-cable itself, so to speak; that is to say, by transplanting the tendon. In the other operation, the object is secured by crossing the feed-wire that supplies the cable, that is, by transferring the nerve—the latter being rather more difficult than the former. There can be, of course, no hard and fast universal rules that can be laid down for the performance of operations of this nature, each case being governed by its own circumstances and the judgment of the surgeon.

The important thing is, that the introduction of these two recent procedures has greatly widened the field of effectiveness in the surgical treatment of infantile paralyses. They are especially effective and available in dealing with these paralyses of young children, because the new functional circuits thus created are readily established in the undeveloped economy of the little patient, who easily accepts and adjusts himself to the new conditions. They afford much the same sort of superior advantage over the old splint and tenotomy methods that the practice of crossing circuits in an electrical system would afford over that of simply mending and

splicing wires that were broken or displaced.

Robert Jones, who is probably the best living exponent of this type of surgery, lays down the dictum that "no operation such as tendon transplantation or nerve transference should be discussed until all deformities have been corrected and retained in correction for at least a fortnight." He then lays down various rules for the carrying out of these forms of correction. Thus, he divides the process of making splints into three steps: (1) taking a negative case of the limb, (2) making a positive from the negative, and (3) molding the splint on the positive. Of these three steps, he says, it is essential that the first be performed by the medical man himself, in order to insure that the limb be in the correct position; otherwise, the splint will be useless. The second and third stages may be carried out either by the medical attendant himself, by an instrument-maker or by some specially trained nurse.

Concerning arthrodesis, or the artificial ankylosis, of the knee-joint, Jones declares that this should never be performed on a child. It is unwise to undertake tendon transplantation in children under five years of age, for the following reasons: (1) because of the technical difficulty of manipulating small tendons; (2) because time should be given to the muscles to recover without operation; and (3) because it is essential that the child should be old enough and intelligent enough to help voluntarily in the after-treatment.

Upon the question of the time at which mechanical treatment of poliomyelitis should begin, Jones recommends that for the first four weeks the patient have complete rest in bed, but that even during the first few days, if there be any tendency to deformity, a temporary light splint be employed. At the end of two weeks, when all pain has usually subsided, a cast of the limb should be made and a splint molded thereon—pre-supposing, of course, that there exists any deformity calling for surgical intervention.

Three qualities are absolutely essential in the surgeon for the successful carrying-out of these mechanical and surgical procedures, as follows: a thorough knowledge of the anatomy involved, a nice sense of mechanics, and adequate technical dexterity. If he does not possess these to a well-developed degree, he had best not attempt this type of surgery, but refer his post-myelitic patients to one who is thus qualified. They are most distressing

cases to the parents of the little patients, and they tax the patience and resources of the medical man to the utmost; but, on the other hand, under modern knowledge and facilities, and with painstaking care, they often yield most surprisingly good results and thus win the gratitude and loyalty of the family as almost nothing else in the world can do.

Try your hardest, give all you can, act by the inner light and stand true to what you know, and let the result take care of itself. You will be surprised to find that it was not nearly so bad as you think; perhaps it was more than passably good; possibly it was excellent. If you are too anxious about the impression you are less likely to succeed than if you are passionately engrossed in what you do. All is forgiven to sincerity.

—Philadelphia Public Ledger.

DEATH OF PAVLOV

Death is taking a heavy toll of distinguished members of the medical profession during these strenuous times. Thus, we have only just learned of the decease in mid-February, at Petrograd, of Ivan Petrovitch Pavlov, at the age of sixty-seven years.

Perhaps no man has contributed so much, since Beaumont, to an understanding of the work of the digestive glands of the stomach, as has Pavlov. It was he who explained the relation of appetite and sense stimuli to gastric secretion and digestion, and the discovery of secretin by Bayliss and Starling and the later developments of hormone-therapy undoubtedly rest directly upon the pioneer work of this distinguished Russian.

Pavlov, it is said, "was a charming personality, beloved by his pupils, for he was ever ready to stimulate their researches and to grant them opportunities and his personal aid in their execution."

LIFE—ITS CONCENTRATE

In the "Spoon River Anthology," Edgar Lee Masters prints the postmortem autobiographies of several hundred spooks whose bodies lie rotting in the cemetery at Spoon River, Illinois. In these prose-poems the defunct tell the absolute truth about their careers on earth. They have been dead a long time, and, hence, stand before us in spiritual nakedness, revealing all the squalor, longing, despair, meanness, disillusionment, and majesty of human life.

Of course, there were doctors in Spoon River; and they were good doctors, too. We are told that Doc Meyers, for years,

was a respected, successful, happy, generous man—too generous, in fact, for a young woman came crying to him in the night, begging to be helped out of her trouble . . . and he yielded. He died in prison. And Doc Hill . . . but let the doctor's shade tell its own story:

I went up and down the streets
Here and there, by day and night,
Through all hours of the night, caring for the poor
who were sick.

Do you know why?

My wife hated me, my son went to the dogs,
And I turned to the people and poured out my love
to them.

Sweet it was to see the crowds about the lawns on
the day of the funeral,

And hear them murmur their love and sorrow.
But oh, dear God, my soul trembled, scarcely able
To hold to the railing of the new life,
When I saw Em Stanton behind the oak-tree
At the grave,
Hiding herself and her grief!

Can you crowd into one hundred and
thirteen words so many of the conflicting
motives and emotions of this joyous, troubled,
passion-filled life? Try it.

SIMPLE REMEDIES—IN DIABETES, FOR INSTANCE

Having scoured the world for remedies, levied on earth, air, fire, and water, on animal, vegetable, and mineral, on nature's combinations as found in springs and their saline constituents when separated, having seized upon every new discovery like the x-ray, radium, and so on, and sought to detect therapeutic resources in them, we seem at last to have begun at the natural beginning and to have taken up the primary and most obvious of agencies.

The Allen treatment for diabetes examples this aptly. After trying out everything else, Allen gets down to starvation, and finds that acidosis and glycosuria alike subside under this absolute regimen. Then, starting from the basis of complete emptiness, he ascertains by very careful introduction of food, what is the exact quantity and form the patient can manage without return of the ominous symptoms. The total quantity is at first exceedingly small. Table No. 2 allows for a day 420 Grams of asparagus, celery, onions, cabbage, and spinach, with tea or coffee, or 150 calories in all.

Starvation does not, as many seem to think, occur immediately if a usual meal is missed, or if less than half the quantity necessary to support adult life is taken; life can not be sustained long under acidosis with glycosuria; but, when these are removed,

the exact quantity each patient can really utilize each day, and the least harmful forms of food for each, are ascertained slowly but surely. This method of treatment for diabetes was described fully last month. See page 254.

The success of this treatment is apt to cause ear-tingling in those of us who have been blundering along for all these years with opium, codeine, and other narcotics. Reminds one of the days when we used to pour in our intestinal antiseptics, so useful in diabetes, while the bowels were loaded with feces that furnished a constant stream of toxins to the blood. Why didn't we think of this simple method first!!!

Then there is the dry diet. For years we have urged its importance, on strictly mechanical principles, in the treatment of certain affections of the heart. The idea of reducing the unavoidable labor of a partly disabled organ to the minimum possesses a simplicity that commends it. The improvement following its application is gratifying. So also the value of strict limitation of fluid imbibition in treating obesity is quickly made manifest by a trial.

But now comes that good observer, Dr. Herbert T. Webster, of Oakland, California, who, in the current number of *Ellingwood's Therapist*, asserts that he can vouch for the success of a colleague who treats many if not nearly all maladies by means of the dry diet. Such widely differing diseases as advanced pulmonary tuberculosis, carcinoma, and the fibroid indurations following compound, comminuted fractures, with total loss of mobility, give way under this drugless method.

While doubtless this is too good to be true, we may realize that there are values in the dry diet that we have not yet suspected; benefits that may be discovered by trials, applications of the principle that may reveal possibilities hitherto deemed incredible by most of us.

Through complexity we progress to simplicity. From Warburg's tincture with 47 ingredients we pass through the ever shortening prescription to the single remedy, administered with definite purpose. Possibly we may in time pass through the study of every specialty, of every separate part of the human apparatus, to that of the man as an individual and learn to evaluate his vital assets. We may even reach the heights of seeking to preserve health, instead of waiting until disease is established and its disastrous assaults have been made—but we incline to

believe that before this point is attained the millennium will have overtaken us.

If, instead of "trying to rediscover things that had been already discovered and forgotten ten times over in the centuries of the past," we devoted ourselves to delving, mining, and diving into the things of the present, how much more profitable the occupation might be and how much greater the advance.—*Veterinary Journal*.

FLY-CATCHING TIME

One of the greatest advances made by modern sanitary science is the detection of insects as carriers of disease. The old airborne and fomites hypotheses are pretty well demolished now, and we place the blame for infections on such tangible objects as flies, fleas, lice, bedbugs, ticks, and mosquitoes. The work of practical prevention is immensely simplified thereby, for the average citizen can see an insect, and he has none of the superstitious dread of it that he shows toward unseen enemies. He may look on the occurrence of an epidemic as a visitation of the anger of the great gods and consider the only pious ways of meeting it to be repentance, reform, and offerings at the altars; but he will swat the fly, without pausing to ascertain whether the pesky creature is under the protection of Apollo or Minerva.

With which erudite premise we now proceed to remark that now is the time to subscribe to the *A. J. C. M.* and eke to swat the fly. Every all-fools'-day lady fly carries about her the certainty of innumerable billions of other flies during the coming summer. Kill one musca now, and many a muscular exertion later is saved; many an objurgation is rendered unnecessary, and one's prospects for the hereafter are by that much brightened. Many a consoling moment of early morning or late afternoon slumber may be thus added to the sum total of happy time. But—how are we to get within range?

Now is the time for the wife to clean house, before the surviving flies have awakened to activity. Brush out every dormant insect from closets and the innumerable crevices in which they have taken refuge, and sweep them up and into the fire—or, better, into the chicken-coop. Nor take it for granted that the motionless creatures are dead—they're only shamming, like Kipling's fuzzies.

Borrow a post-hole digger and sink several holes in the garden, about four feet deep. In one, deposit all the garbage and dish-water, and all the other slops possible that are produced by the household. Let nothing stand about that could feed a fly. Leave no

water about or anything else that might satisfy the thirsty creature. Over this hole place a fly-trap, one of the big ones of about ten or twelve inches in diameter. The garbage will attract the flies, and the trap will catch them. Whenever there is a large-enough collection, drown them and feed them to the chickens—they need all the meat they can get, and it is well to cultivate the insectivorous habit in them. When one hole is nearly full, cover it and use the next one. A piece of raw liver as bait collects the blow-flies and biting horse-flies.

Every bit of manure and offal in which flies may breed should be tucked under ground promptly. Let every member of the family understand that dishwater and water from wash-basins, thrown on the ground, attract the insects and favor their propagation. We have destroyed innumerable deer-flies by placing one of these large traps over a horse's droppings, in the woods, where the biting things had driven the horses crazy.

It seems scarcely necessary to say anything about the need of screening the premises, but one should not forget the need of using this protection for the animals in the stables also. It will surely be shown one day that tetanus may be transmitted by some biting insect that haunts the horse.

Every room in the house should be supplied with a fly-flapper, and these should be attached to hooks by long rubber cords, allowing them to be carried to every corner and then returned to their place by the elastic. Careful calculation has indicated that one-eleventh of one's time in summer is devoted to hunting for this indispensable instrument.

"Life is not only for work; it is for one's self and one's friends."

THE VALUE OF SUGGESTION

Wherever one goes, he finds himself regaled with accounts of the successes of the various suggestive-therapeutic methods that happen to be in vogue, but, as soon as the novelty of one wears off, another makes its appearance, differing only in the name and in so much of the outward seeming as may be necessary to impart the dress of novelty. The prescription for the successful introduction of such a new fangled therapy appears to be in somewhat after this fashion:

A practitioner of rather imposing appearance and an impressive personality;

A novel dress for the ancient idea;

A quasi-religious plea for the method, together with denunciations of dependence upon the "arm of the flesh," the "chariots and the horsemen of Egypt"—*ergo*, on human reason and comprehensible measures.

An enveloping domino of mystery.

That is about all, except that there must be, as a powerful accessory, an influential woman to advocate and circulate and exaggerate the matter.

Nevertheless, the doctor who fails to avail himself of the resources legitimately comprised under the term suggestion is worse than the rascal who does; for, he is a fool. And a brainy scamp is far less to be dreaded and blamed than an honest fool.

There is this difference: the wise man uses suggestion as a plus to reason and science. He ascertains, then removes, the true causes of disease, plucks out the thorn; he restores the floating viscera, slaughters the invading microorganisms, empties and disinfects the external and internal sewers, and to these material aids he adds the mighty force of suggestion.

Recognizing the tendency of humanity to superstition, such a doctor turns this into a means of aiding the cure. Not one of the purely suggestive methods can hold its own against the wise combination here depicted. We are ready to do all that the Weltmers and the Eddys can do, besides a lot more of which their ilk are ignorant and incapable of performing.

However, it is not enough that we merely brag about being able to do this—we must also do it. There is but one specialty in medicine more essential than suggestion. Better know this, and be an accomplished psychologist, than an adept in gynecology or geriatrics. Any work on hypnotism in any guise is of untold value; but, the doctor must go far beyond any single book, must know the fundamental principles upon which all suggestive methods are based. The recognition of these forms the center from which one may work in any direction.

Reduce the miraculous cures told in all the holy writs and the royal touch for the king's evil to the common denominator, and the lesson is learned. From it, we pass successfully to the estimation of Perkins' tractors, and hence down the line to Keeley, Weltmer, Eddy, Mesmer, Still, *et id omne genus*.

The popular predilection for suggestive methods of therapeutics is easily accounted for on evolutionary principles. The sentiment of humanity moves, pendulum-wise, between the extremes of progress and of conservatism.

Each side applies hard names to the other—"innovation" and "fogyism," "progress" and "reaction"—and such like—but, in truth, the safety and steadiness of humanity depend upon the fairly even balance between these two forces, the one centrifugal, the other centripetal.

But, the apostle of change is always, in the eyes of the other, irreligious. And, as age is ever conservative, and it is the old who write while the young act, history is a product of advancing years. So, we read the protest against the putting on of clothes as an evidence of the consciousness of sin; and the Deity turns, from the offerings of the "degenerate" cultivator of the soil, to those of the herder of cattle. Undoubtedly, in a previous age, the divine wrath was invoked against the "impious" one who herded tame animals instead of hunting them in their still free and wild stage.

Mankind progressed from the acquisition of personal property by individual effort to its seizure by superior force; the protection of property rights by law and the altruistic principle came later. The grand principle, that the prosperity and happiness of each is assured by those of the rest, is one that is as yet scarcely recognized, except by the most advanced and enlightened thinkers.

Realizing this fundamental truth, we can explain and comprehend the difference between European sentiment and action and those of our own. The moral considerations that render Canada and Mexico safe from aggression on our part are not as yet comprehensible there, where weakness on the part of the neighbor is simply an invitation to forcible acquisition of the weaker's soil. Realization that the close bonds of amity between our northern neighbor and ourselves are worth more to each than conquest or any other form of political amalgamation is not yet possible across the Atlantic.

The European ideal is still that of the robber. The ideal of America is, industry. But, in the eyes of the East, our sole thought is that of money-making. Between that and the development of resources and individuals by peaceful industry, the European is not as yet capable of drawing the broad distinction.

His ideal is the raider who, by force, amasses wealth and then seeks to enact just such laws as may protect him in the enjoyment of his acquisitions, and transmits them to his descendants, by entail. Trace back the original source of that estate of "five thousand acres surrounded by a ring

fence," which the "lord of the manor" has received from a line of ancestors running back for centuries, and we find that it is derived from a successful act of robbery—the sequestration of lands really owned by the commons being included in this category. The next neighbor derived his title from purchase, with the proceeds of commercial or manufacturing industry—and he is looked upon with contempt by the descendants of robbers surrounding him.

So, whenever the scion of European aristocracy applies to us the derisive title of "money-grubber," "worshiper of the almighty dollar," "pork-packer," or any other name indicative of contempt, we may, in defense, inquire by what particular variety of thievery he, the "noble," came to be in possession of his ancestral domains.

My good friend, no need to be ashamed of the fact that your fortune came from the manufacture of soap, or to hang your head in the presence of the Duke of St Albans. Would you be willing to owe your opulence to the same source as his?

Thoughts hardly to be packed
Into a narrow act,
Fancies that broke through language and escaped,
All I could never be,
All men ignored in me,
This I was worth to God, whose wheel the pitcher shaped.
—Robert Browning.

PRACTICAL POINTERS FOR APRIL

April fool—the doctor who tells his patients that "most of our drugs are worthless." Also, several other kinds of a fool.

Nocturnal syphilitic headaches and bone pains yield promptly to the iodides. Try calx iodata, in 20- to 30-grain doses, with mercury protoiodide.

You should read every line in our "What Others are Doing" department. There you will find condensed, but sufficient, accounts of all that's new and worth-while in therapy.

A solution of sodium ethylate is an efficient dermal caustic for the destruction of moles, nævi, and other cutaneous blemishes. Apply with a glass rod to the tumor only.

I want to know all that is possible to know about the successful treatment of rheumatic joints and obscure muscle-pains. Send me your best suggestion—and condense it into a single paragraph.

Ever use pleurisy-root for pains in the chest? Try bryonin. It is a favorite with the Eclectics for pleurisy, pneumonia, and all painful conditions due to congestion of the serous membranes.

If you prick your finger or otherwise injure yourself while caring for a luetic patient, rub some 33 1-3 calomel-ointment into the injured spot at once. This is an effective preventive of infection.

Whooping-cough? Scoff all you please, but calcium sulphide is our best remedy. Saturate the patient thoroughly with it. Disprove my assertion of its merit, *if you can*. Support its action with hyoscyamine and monobromated camphor.

Metchnikoff has shown by his work on animals that infection with the parasite of syphilis does not occur when a 33 1-3 percent calomel-ointment is thoroughly rubbed into the site of inoculation within one hour after exposure.

Have you an anemic patient—one who doesn't improve as he should under iron given internally? Try weekly subcutaneous injections of iron citrate, or of a combination of iron, strychnine, and arsenic.

Use your CLINIC index. If you haven't one, drop us a line (postal card) and it will be sent without charge. With a series of bound volumes of this journal, well indexed, you have a "cyclopedia of practice" that, for practical value to you, positively cannot be equalled.

For the weak heart of the paroxysm of angina pectoris, give caffeine and sodium benzoate hypodermically; relieve spasm with glonoin; and alleviate pain with morphine and hot applications to the precordium. Digitalis is contraindicated. This is the advice of Kohn.

With mercury salts going up like a war-balloon, the time is ripe for the doctor to use more of the vegetable cathartics; for instance, podophyllin and aloin. Why doesn't the average physician prescribe podophyllin more frequently? There's no better hepatic stimulant.

The food decomposition products, which are at work from childhood to old age, are the chief underlying factors in the production of high blood pressure and cardiac disease of later years. Thus writes R. N. Willson in the *J. A. M. A.* "Clean out, clean up" Oh, well, you know!

Allen's starvation treatment of diabetes now has "first call" with the medical "four hundred." And it has great promise. Allen is one of the brilliant group of investigators working at the Rockefeller Institute. The method was described fully in our March issue, page 254.

Atropine, given in 1-100-grain doses, hypodermically, fifteen minutes before beginning etherization, is said by W. J. Robinson

(*Critic and Guide*) to reduce the quantity of respiratory secretion, lessen spasm, raise blood pressure, and strengthen the heart and respiration. But—it may abolish the pupillary reflex.

Ochsner declares that, in his experience, gastric cancer often follows gastric ulcer when the patient has habitually eaten large quantities of food likely to be infected with manure, such as celery, lettuce, radishes, and the like. The manure-borne cancer-germ is thus conveyed to the open sore in the stomach.

Hudovernig (*Neurol. Zentralbl.*, No. 16, 1915) says that the tissues of the dipsomaniac—the "d. t." patient—are saturated with alcohol, which can best be removed by sweating the patient with pilocarpine. Guard the heart with digitalin. Under this treatment, the percentage of recoveries rose, from 58, to 80 percent.

A supply of veratrine should be in every doctor's emergency pocket-case. Not only is it one of the best and safest remedies we have for the rapid, bounding pulse of febrile conditions, as in pneumonia and pleurisy, but it is positively the best single remedy we have for puerperal convulsions. Push it till the pulse is slower—to 80 or less.

Rosenow has learned some mighty interesting things about appendicitis. For instance, he found a *specific* type of streptococcus imbedded in the tissues of every diseased appendix. Cultures of these organisms caused appendical disease in rabbits. (Yes, rabbits have appendixes, too.) Moral: Before long, we shall be curing recurrent appendicitis with bacterins. Want to experiment? Write me.

Goetsch's int resting experiments, recorded in the *Johns Hopkins Hospital Bulletin*, show that extract of the anterior lobe of the pituitary body is a stimulant of sexual development and activity, in both sexes—at least in rats. The posterior-lobe extracts have a retarding effect. Corpus luteum (lutein) stimulates sexual development in the female, retards it in the male. So much for the experimental phase; now for the clinical.

A subscriber asks us to explain "the Gibson ratio." This is a prognostic sign in pneumonia, first described by Gibson of Edinburgh, to wit: when the figures expressing pulse frequency are as high as the figures expressing blood pressure, then the patient is likely to succumb: pulse, 110; blood pressure, 100 to 110—danger! It is of less value in children and the aged than in vigorous young adults. See February, 1915, number of CLINICAL MEDICINE, page 158.

Leading Articles

The Therapeutic Indications Suggested by Routine Blood Examination

By B. G. R. WILLIAMS, M. D., Paris, Illinois

Author of Williams' "Laboratory Technic for Practitioners"

EDITORIAL NOTE.—*Doctor Williams has promised us a number of papers in which he will show the practical therapeutic value of the laboratory findings. We believe that these papers will prove of signal interest and value to the readers of this journal. The general practitioner will secure from them just the assistance he needs to make the report of the clinical laboratory of maximum value to him.*

TURN on the searchlight!

An Irish private was doing picket work in northern France. Pat, it is said (of course, you need not believe this story), was equipped with pocket-flashlight, pistol, rifle. Likewise with ample instructions. But Pat was not good at remembering. In the course of the night, Pat heard a noise, whereupon he promptly shouted, "Who goes there?"

No answer forthcoming, Pat reasoned quickly: "If that is a German spy, I can get him with my rifle; if it is a Zeppelin, it would be better to shoot into the air with my pistol; but, if it is only an owl, a whoop will scare him away. I think I'll try all three and so settle the matter." Two shots resounded, then a cry pierced the air.

The result will appear further along.

Turn on the searchlight—always? You cannot diagnose a blood condition without a blood examination; and this paper has been written to prove that you cannot successfully treat a diseased system by aiming at everything all at once.

The physician glances over the blood report submitted, then attempts to detect some little point that may aid him in his treatment of the case. He ponders over the figures and the long names for the little cells (a blood report is a bit scientific and formidable), then, often, lays it down with the impression that, surely, there cannot be much of practical worth in it. I fear, too, that he will find but little in the texts to contradict this conclusion. And this has prompted me to give somewhat in detail the therapeutic indications suggested by the routine blood examination.

Pat missed the skunk creeping closely to the ground, but the pussy-cat was impressed by the demonstration and confided this fact

to Pat in its own characteristic way. Watch out for the skunk in the blood report.

What Is Anemia?

What is anemia? Only one definition suits the viewpoint of the laboratory-man. Anemia means a diminution of the number of erythrocytes (red cells) present in one cubic millimeter of blood. Most other definitions are unsatisfactory, inasmuch as generally hemoglobinemia (diminution of the hemoglobin, or blood-coloring) is included in or confounded with it. Of course, the two conditions may go hand in hand, and usually do so to a greater or less degree; but, still, we know that anemia may occur with only a relatively slight hemoglobinemia present, or the reverse.

Anemia is determined accurately by a simple counting of the red cells, though it may be suspected in a spread preparation by the fact that there do not seem to be enough red cells in a given field as compared with the number of white cells or in comparison with other preparations spread in the same manner. Certain atypical red cells may mean anemia.

The symptoms of true anemia are not characteristic, but are those of hemoglobinemia—pallor, albor, languor, and so on. But, for this very reason, the blood examination is important, inasmuch as the treatment of anemia and of hemoglobinemia are not identical. Do not look to symptomatology for your therapeutic indications.

The Causes of Anemia

Anemia is treated most rationally by aiming at the cause; and the causes of anemia may be classified roughly as follows:

1. Anemia due to hemorrhage, apparent or concealed. Concealed hemorrhage is, of course, the more dangerous type, and it includes not only types concealed by anatomical relations, but microscopic seeping, as in uncinariasis, malignant growths of the bowel, dysenteries, pulmonary tuberculosis, and renal tuberculosis where the blood may be discovered only by chemical or microscopic tests, but which, continuing a long period of time, constitutes a very grave condition, so that the patient may actually bleed to death without the true cause being recognized. In hemophilia and in severe jaundice the patient may bleed to death, without the exact location of the microscopic hemorrhages ever being ascertained.

2. Toxic anemias. Here the poisons may be introduced from without (lead and so on); or the anemia producers may be manufactured in morbid processes within the body. Under the latter heading must be included not only bacterial poisons but toxic remnants of foodstuffs or body-cells.

The surgeon can sometimes dispose of the first class very quickly, if he can locate and reach the seat of the hemorrhage. It is not always possible to do this, but we are not entirely helpless. Two therapeutic agents have been proposed, namely, normal serum and emetine.

Normal serum supplies active fibrin-ferment and other materials designed to favor clotting of the blood at the seat of hemorrhage. It has been used mainly in cases of hemophilia, but promises much in the future treatment of other types of hemorrhage.

Emetine has been administered especially in the pulmonary cases, but should be given a trial in all cases. Chauffard states that the dose should be small (0.04 to 0.06 Gm. of emetine hydrochloride), and that thus nausea may be avoided. He contends that these small doses are sufficient. It has long been known that emetine will cause blood to disappear from the stools in dysentery, and that so promptly that the action must be regarded as specific, without any relation to the disappearance of the amebæ. It seems very probable that emetine will take the place of the opium derivatives, except, perhaps, in the very acute and urgent forms.

Hemorrhage is, by no means, the more common cause of anemia. Among the toxic causes, I have pointed out lead. While lead poisoning by no means is a very common condition, I am certain that almost 50 per cent of the milder cases are overlooked in

the routine of practice. In cancer, certain hemolytic bodies may be demonstrated by test-tube experiments, although we have not determined their composition. In nephritis, there may be many causes for the secondary anemia (the hemoglobinemia is usually more marked than is the anemia), but the retention of poisonous salts or acids doubtless plays chief part.

The Calcium and Glycerin Treatment of Anemia

The most important contribution to the cause and treatment of the toxic anemias was offered by Tallqvist several years ago. While working with the bothriocephalus, he found a hemolytic substance that could account for the anemia in those affected. He discovered that this hemolytic substance was oleic acid, and that both its sodium and cholesterin salts had hemolytic properties. This suggested the cause of the toxic anemias in general, and, so, attention was directed to the fatty acids.

Vetlesen (*Norsk Magasin for Laegevidenskab*) followed up this work, with special reference to pernicious anemia, and secured favorable results from appropriate treatment even in the severe cases. Several years ago, I myself became interested in the subject and have seen it studied in a number of cases of anemia.

In the first place, these fatty acids or acid salts must be neutralized or combined into harmless substances. Tallqvist suggested the use of calcium, which would unite with the oleic acid and form an insoluble compound; and I will here say, before passing on, that calcium, in the form of calcium lacto-phosphate, for example, does seem to be of value and should be tried in every case of anemia (that is, as defined above).

Tallqvist also suggested glycerin (chemically, glycerol, or propenyl alcohol) for binding the oleic acid, this resulting in the formation of harmless glyceryls or esters of oleic acid (oleates). I must confess that I have seen wonderful clinical benefits follow the administration of glycerin in anemia; while Vetlesen's reports indicate his satisfaction with this medication even in the so-called primary anemias.

The glycerin must be pure and, of course, be relatively free from fatty acids. Glycerin is not at present so cheaply secured as it was a few months ago, so that the physician need not fear that he will be using something "common" when resorting to glycerin. These patients usually take the glycerin very well,

indeed. Where it can be borne, give a table-spoonful, with a little lemonade, three times a day; increasing or lessening the dosage as may be indicated by the blood examination rather than by the symptoms, for, it has been stated that the symptoms are not really due to anemia in itself. Startling results are not usually secured at once. The disease may be held at a standstill, and then after a few weeks or months a slow but permanent improvement may be noticeable. If the patient does not become discouraged and will stick to the treatment, he may regain his feet.

A Word About Arsenic-Therapy

Arsenic has won a place in the treatment of anemia; but, it should never be administered for hemoglobinemia, except where the anemia is likewise consequential. The results from arsenic-therapy are more prompt than from calcium or glycerin, but are not nearly so permanent; and the use of arsenic should be followed by calcium or glycerin. The latter agents seem to neutralize the poisons producing anemia, while the former perhaps merely stimulates the manufacture of red blood-cells.

Arsenical preparations are many, and all are good. The triple arsenates or other combinations may be used. I may be a bit prejudiced, but it has seemed to me that better results followed the use of the liquid preparations, providing these were reliable. (Naturally, there is the rub!) *Liquor arsenii compositus* (Barclay) or a dependable Fowler's solution may be carefully exhibited in increasing dosage, and blood countings be made to check results, if clinical benefit is not pronounced.

It seems to me that arsenic-therapy is too often abused. The increase of blood-cells is followed by beneficial clinical results (if the hemoglobinemia is due to the anemia), and the physician, anxious to gain these, becomes excited and pushes arsenic even at the expense of the hematopoietic tissues. He overlooks the old law of the conservation of energy, and seems not to realize that he but hastens the day of reckoning. He gains results that are gratifying to the patient. The latter lives well for only a brief period, for, the cells thus called out, like the reserves engaged at the beginning of a battle, will be needed later. Massive doses of arsenic in a case of pernicious anemia will stand the patient on his feet within a few hours, but place him in his shroud several months before the disease, left alone, would have done so.

Use arsenic; but, drop it as readily when it has served its purpose.

The Use of Hydrochloric Acid

In cases of anemia, and especially in pernicious anemia, it is a rule that the hydrochloric acid of the stomach is deficient or lacking. This suggested to Hess a very rational treatment for all cases of pernicious anemia. Hess reasoned that the red cells might be increased in number and the hemoglobin supplied in larger amounts by administering hydrochloric acid and overfeeding with proteins. Where possible, the hydrochloric acid should be given in large dosage after each meal. In this way, persons having achylia may be able to eat larger quantities of "rare" beefsteak, eggs, cheese, nuts, and so on. In case the patient cannot be induced to eat large quantities of proteins, it is well to administer the hydrochloric acid with meat-juice, bone-marrow or other preparation carrying a high supply of proteins. Nuclein may accomplish results where all else fails.

Whereas the glycerin and calcium treatments are aimed mainly at the anemia and the arsenic treatment is aimed solely at the anemia, the hydrochloric acid and concentrated proteins are aimed both at the anemia and the hemoglobinemia; and are of especial value where the blood-index shows both conditions to be severe. The same applies to sanguiferin, although this latter preparation is of more value in a frank hemoglobinemia, inasmuch as it contains nothing (there is some glycerin in the liquid preparation) aiming especially at anemia proper.

Hemoglobinuria

When the laboratory-man reports a low hemoglobin content, certain conditions should suggest themselves to the physician. When this hemoglobinemia can be explained by the fact that there is a marked decrease in the number of red cells, it indicates the presence of anemia together with hemoglobinemia. But in some cases (chlorosis, toxic hemoglobinemia of nephritis, tuberculosis or cancer, for instance), the hemoglobin decrease is relatively marked and the red-cell count not low, the indications for treatment are as follows:

Give iron. This is old advice, certainly, but we yet have much to learn concerning the administration of iron. And what kind of preparation shall we give? I have seen iron used in a number of cases of hemoglobinemia, and my answer may surprise some

of the readers of this journal. While iron is the best of all remedies in the treatment of hemoglobinemia, we never know just which iron preparation is likely to prove best for a given case. It is fairly certain that after a few trials we shall hit upon the proper preparation. Inorganic irons may be of great value in Case A, yet, promptly fail us in Case B. Here, in turn, organic iron may save the day, but lose the tomorrow. Each patient apparently reacts to his special iron; and we are not always able to give a reason for this, although the fact that the hydrochloric acid is deficient or absent in some stomachs may offer a suggestion.

The physician should have at hand several preparations of iron. Even an unethical proprietary may save the day where the ethical ones have failed. I have seen this happen more than once—and the physician should remember that his first duty is to his patient, his second duty to his medical society and his third to the medical politicians that infest some of our organizations. I need not mention these particular proprietaries: if the reader is a successful practitioner, he doubtless knows them well—if I were to list them, some men would conclude that this article were very “unscientific, stupid, and unethical.” Neither need I dwell upon the names of the more commonly accepted preparations that are known by all of us—iron sesquichloride (the most efficient and, yet, the most nasty of all irons, and in certain patients producing more harm than good), iron iodide, iron arsenate, Bland’s mass, iron phosphate, sanguiferrin, and so on.

Iron will sometimes fail in hemoglobinemia, but the percentage of failures will be less if the physician gives, successively, the several irons a fair trial. In the exceptional case, manganese may come to the rescue.

Copper Salts of Value

If iron and manganese both fail, I have even a third suggestion, and it may be worth something to you. It has been asserted that this third remedy was introduced because it was found that pale individuals recovered after eating the green scum from pickled cucumbers set aside in brass or copper kettles. Copper acetate has been of some service in several cases where I have seen iron fail. It may be given in connection with iron (always give iron a trial) or after iron has proven worthless. Remember that overdoses of the copper-salt will nauseate the patient. Copper arsenite has never been used in this disease, so far as I am informed.

It would scarcely be indicated in frank hemoglobinemia, but might be tried in a case of anemia associated with hemoglobinemia.

It is scarcely necessary to go into the subject of laxatives in connection with any treatment of hemoglobinemia. Of these, cascara preparations stand at the head. Cascara should be given alone, and not included in tablets with the iron, for we may desire to increase or decrease the dosage of one and not the other.

Leukopenia and Its Effects

Have you ever wondered why it is that a patient having typhoid fever is susceptible to abscesses, pyelitis, and a hundred and one other nasty complications such as do not follow other infectious fevers? Perhaps there are many reasons, and I am certain that we do not understand all of them, but we are able to determine in many persons (irrespective of typhoid-patients) whether the “body resistance” is low, normal or increased. Here, the blood examination becomes of great value not only to the practitioner of internal medicine, but to the surgeon as well.

While we have long recognized that a leukocytosis (absolute increase of white cells per cubic millimeter in cases not leukemic) is proof and a measure of increased resistance, we have been slow to grasp the fact that its opposite, leukopenia, means lowered resistance upon the part of the tissues of the patient. Moreover, in certain clinical conditions where his resources are needed, a normal count of 8500 white cells or a half-hearted leukocytosis may be counted a clinical leukopenia, a fact which can be appreciated only by the physician attending the case and not by the laboratory-man, which latter cannot be expected to know in every case just what clinical proposition the patient is up against. In some cases, he may suspect it, because of the high neutrophilic polynucleosis (mentioned below).

When the index of the patient’s resistance is low, what shall we do? This question may be answered according to whether or not the case is operative. In appendicitis, for example, a low resistance, as shown by a leukopenia, along with certain clinical symptoms or a high polynucleosis, should mean quick intervention by the surgeon.

Treatment of Leukopenia

How will the internal-medicine-man treat the leukopenia; in other words, how adjust matters so that directly or indirectly in con-

sequence the number of white cells per cubic millimeter may be increased, providing us a favorable index? The proposition is not an easy one in all cases, but may be summed up perhaps in the general advice to furnish pabulum as rapidly as it can be used, aid in the utilization of this pabulum by the tissues as rapidly as possible, and remove waste as rapidly as possible. This all sounds good—now what of the practical application?

The Practical Application

1. Providing proper pabulum. This is a big question in dietetics, and food must be selected for the needs of the individual patient, so that this article cannot consider it at length.

2. Aiding the tissues to utilize this food. Consider the question from the mouth to the tissue-cell. Proper food will not be utilized by the cell or in fact reach the cell unless the alimentary tract is in perfect order.

If the patient swallows pus from a pyorrhea or pharyngeal trouble, take care of this. Too many tuberculous patients seal their fate by swallowing their own sputum.

What of the stomach? If it is probable that stomach acids or enzymes are needed, either supply them or stimulate secretion of the same. (I wonder why quinine in small dosage is so efficient in some of these cases?)

What of the bowel? If the colon is gorged with a rotten mass of foodstuffs taken a week ago, you need expect no "team-work" here. Such a bowel cannot properly digest and absorb the needed food-principles not even select them from a mixture of indols, phenols, poisonous gases, bacterial masses, cellulose, and other filth. Do not hope to get pabulum to the tissue-cell if it must percolate through this mess.

Suppose the alimentary digestion and absorption is perfect, can we not also stimulate and otherwise aid the cell to utilize this pabulum? I think that we can. Do not forget nuclein, which stands perhaps first of all in this special indication, being itself a defensive protein and reconstructive and especially needed by the white blood cell. Phosphates, especially iron phosphate, are also of great value, especially where there is hemoglobinemia. Where the nerve capital is low, lecithin in connection with the nuclein is the thing.

3. Removing waste as rapidly as possible. This must be done by the bowel, by the urine, and if necessary by the sweat-glands. Enough

said so far as the readers of this journal are concerned—this is an old proposition.

An absolute leukocytosis being proof of increased resistance, calls forth no therapeutic indications. It is of diagnostic and prognostic value, but cannot be considered here.

Even as leukopenia and leukocytosis (variation in total number of white cells) may be regarded as indices of body resistance, so may the relative number of polymorphonuclear neutrophilic leukocytes (shown by differential count) be regarded as an index of toxic absorption. (In infections it serves likewise as an index of the intensity of the infection, inasmuch as the toxins vary in concentration directly with the severity of the infection.) The greater the number of neutrophiles, as contrasted with the percentage of the other types of white cells, the greater is the absorption of toxins taking place; the former being the index of the latter. This relative increase I would term a polynucleosis. Normally, these polymorphonuclear cells make up 60 to 70 percent of the white cells. Anything above 75 percent must be regarded a polynucleosis.

Treating Polynucleosis

How shall we treat a polynucleosis? The same surgical considerations mentioned above enter into some cases, but from the standpoint of the internal medicine man the following principles hold:

1. We must prevent formation of the toxins or thwart their introduction from without.

2. We must neutralize and eliminate such poisons as have already been loosed into the tissues.

We know that poisons may be strictly chemical and introduced from without, that certain of them are manufactured in the bowel, and still others are provided by infectious foci. Therefore, the discovery of a polynucleosis demands first of all an accurate diagnosis as to the source of the toxin and its nature; but, as a matter of course, we cannot undertake such a discussion in a paper of this kind. Often at the very outset, however, we may rule out a manifest infectious fever, the taking of chemical poisons, and so on. Where this can be done, we look at once for an explanation of the polynucleosis either to some hidden focus of the infection (teeth, tonsils, sinuses, gall-bladder, lungs, genital organs, and so on) or to a probable copremia. A polynucleosis should always set us searching the urine for indicans.

Cause once found, we all know the treatment—laxative salines, substitution of a

harmless and beneficial bacillus or its products, and the other measures to which I called attention in my articles on the therapeutic indications suggested by the uranalysis.

Mononucleosis

A mononucleosis may be relative or absolute. If relative, we are dealing with a leukopenia, and the indications for this have been given. An absolute mononucleosis, especially in an adult, points strongly to the presence of infectious granuloma, notably syphilis or tuberculosis. It may indicate a tuberculous infection while still latent; that is, before a decision in regard to active tuberculous disease is yet possible. A mononucleosis is the rule in tuberculous adenitis. The laboratory-man must always rule out lymphemia, and must never overlook the point that very occasionally a lymphemia may occur without a great increase in the total number of leukocytes. (Schleip.)

In a tuberculous or syphilitic mononucleosis, the lymphocytes rather than the endothelial leukocytes are increased, and our attention is directed invariably to the lymph-glands.

Overlooking the diagnostic importance of the condition, how may we treat the mononucleosis itself? There are two indications:

1. If the condition is only relative, the treatment for leukopenia will apply.

2. If the condition is absolute, we resort mainly to iodine compounds, especially calcidin. Mercuric iodide will be found valuable, as a rule, but of greater worth in the syphilitic cases.

When an absolute lymphocytosis is met with, make a differential diagnosis if possible between lymphemia, tuberculosis, syphilis, and Hodgkin's disease, but use calx iodata and possibly mercury until this diagnosis is made.

Myelemia and Lymphemia

These are discouraging conditions, even to the most enthusiastic therapist. The

physician is especially helpless in the lymphemia of childhood. Just now you are hearing much about the use of benzol—forget it. Good results apparently follow its use in some cases, but it is usually administered in large doses; and the same objection may be raised here as in the case of the large doses of arsenic in anemia—the patient lives well, but briefly. In other cases, he lives briefly, but not well. “The drug is still in its experimental stage” argue some. True enough, but it has remained there for several years—so has vinegar in the treatment of valvular lesions. Many things are in the experimental stage; but, pray, do not experiment overtime on the poor cuss afflicted with leukemia. Goodness knows his outlook is dark any way you glance at it. If benzol had ever cured any “undoubted case” (as the highbrows put it), I am sure that we should be justified in giving it another chance.

With our present knowledge, the discovery of leukemia is of more diagnostic and prognostic importance than it is of therapeutic moment. When you read over the blood report, “look out for the skunk.” The true indications are usually supplied by the degree of anemia or hemoglobinemia consequent upon it or by the symptomatology. There is no known specific for leukemia, so that in all cases of leukemia a better tab may be kept on the disease by the red-cell count and hemoglobin estimation and by the symptomatology than by the leukocyte counts. A certain well-meaning man may report a case showing 60,000 leukocytes on Monday, but 59,999 leukocytes after giving a dose of such-and-such drug. But does this really mean anything?

In conclusion: Iodophilia is the result of toxemia, and, while it is a less accurate index, its meaning is the same as that of the polynucleosis. Eosinophilia, basophilic stippling, and certain other blood conditions are of more diagnostic than therapeutic value. Certain other findings, such as megaloblastic shower, are of prognostic value alone.

THE new (?) therapists are just beginning to learn the importance of intestinal toxemia. “The popular present-day name for this condition,” says Willson in his admirable paper on “Cardiovascular Poisons,” “is intestinal stasis, and the surgeons are manifesting a cordial interest in Jackson’s membranes, Lane’s kinks, and similar obstructions as its cause. Our grandparents knew better.”

Pons Nasi

Being Some Comments Upon Deformities of the Bridge of the Nose

By RALPH ST. J. PERRY, M. D., Minneapolis, Minnesota

EDITORIAL NOTE.—A man comes to you with a crooked, flat or otherwise deformed nose. Frankly, it's ugly, and he wants it transformed into a thing of beauty. Now, what can you do for him—and what will you tell him? You want to know, don't you. The answer is—read Doctor Perry's paper. He'll put you next.

THAT portion of the nose between the root and the tip, known as the bridge, is subject to deformities, either congenitally or as a result of traumatism or disease. Owing to their many forms and variations, these disfigurements have never been classified, although a few simple descriptive words tend to identify or distinguish each one. Deviations from the ideal are either right or left lateral, concave or convex, or some combination of these, as shown in Figures 1 to 8. Lateral and convex deviations, as a rule, are congenital or due to developmental abnormalities, though traumatism is an occasional factor. Concavities of the nasal contour are more often due to injury or disease, though quite a few of these are to be seen in persons above either traumatic or pathic suspicion.

When a case of nasal deformity of any kind presents itself for treatment, the first thing to do is to secure a record of existing conditions, and, while sketches and photographs are good for the purpose, nothing excels the plaster cast; for, a cast shows indisputably the exact size and shape of the organ, the location, nature, and extent of the deformity, and, so,

when colored "to life," becomes a facsimile of the nose. The time required to make the cast, or mold, is less than that required for taking a photograph or making a sketch and usually less than that required to convince the patient that the procedure is a harmless and painless one. The method in vogue in my office is as follows:

How to Make a Plaster Cast of the Nose

Materials needed: Vaseline, olive-oil, putty or plastic clay, absorbent cotton, two camel's-hair brushes, towel or bathing-cap to protect the patient's hair, apron or towels to protect the patient's clothing, plaster-paris, table-salt, flattened breathing-tube (Fig. 9), plaster-mixing bowl, spoon, spatula, pocket-knife, warm water.

The method: The patient is placed on the chair, table or sofa, recumbent and comfortable, and the apron, towels, and cap are adjusted so as to protect the clothing and hair (Fig. 10). The eyebrows and eyelashes (and mustache, if there is one) are filled and matted down with vaseline; a wall of putty or plastic clay is built up on the face, an



FIG. 1
RIGHT LATERAL CURVE



FIG. 2
LEFT LATERAL CURVE



FIG. 3
DOUBLE CURVE OR TWIST



FIG. 4
RIGHT LATERAL CURVE + CONCAVITY



FIG. 5
LEFT LATERAL CURVE + CONCAVITY



FIG. 6
CONCAVITY
OF THE
BRIDGE

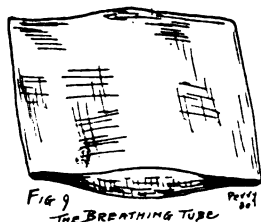


FIG. 7
CONCAVITY
OF THE
BRIDGE



FIG. 8
CONCAVITY +
CONVEXITY
OF THE
BRIDGE

inch high and enclosing the nose, inner half of each orbital region and the upper lip (Fig. 11). The enclosed area and the inner side of the putty ring are now brushed over with a thin coating of the olive-oil, being care-



ful to leave no uncovered spots. The breathing-tube is now placed in the mouth and the patient told to breathe through it, and not to try to breathe through the nose. The nostrils are then occluded with small wads of absorbent cotton—inserted very gently and very loosely, so as not to distend or distort them—and these cotton plugs are brushed over and saturated with olive-oil.

To the warm water, enough salt is added to give it a saline taste, and this salty water is stirred into a small quantity of the plaster-paris to form a thick creamy magma. By an assistant, this magma is dipped with a spoon from the mixing-bowl and poured over the eyelids, eyebrows, and about the alæ and canthi,



Fig. 10. Preparing to make the cast

the camel's-hair brush being used to facilitate the covering of the recesses. In brushing the magma into the folds, wrinkles, and crevices of the perinasal region, do not let the plaster set with a smooth top surface, but roughen it up a little; for, upon this foundation must be built up a backing to strengthen the cast—and a rough top surface gives points of attachment for the several batches of plaster-paris to follow. However, the final layer may be flattened and smoothed off with a spatula, as shown in Figure 12.



Fig. 11. Showing preparation of the face.

The patient is now told to "enjoy life" for a few minutes while the plaster sets, being warned that the setting thereof is accompanied by a sensation of heat, muchly perceptible, but entirely free from danger. When this heat has become quite noticeable to the patient, a gentle tapping on the cast will give a sharp, hard sound, indicating that the plaster has set clear through. The putty wall is now removed, the cast sharply tapped, slightly wiggled, to loosen it from the skin, and then removed by drawing it downward and outward in line with the nose. In doing this, lift the cast from the forehead slightly and see whether any of the eyebrow-hairs are caught in the plaster; if so, detach them by passing a probe along over them, for they may adhere to the cast and become de-

tached from the face. Follow the same course with the eyelashes.

The cast is now set aside to dry out, while the patient's face is cleansed. A few hours in a warm room makes the cast almost water-free, whereupon it is ready to be used as a mold from which to make a replica.

If there should appear any palpable defects in the mold, which may cause trouble



Fig. 12. The plaster-paris mask is now applied.

in the casting, they must be filled in with beeswax or some sticky wax melted and flowed in with a dentists' wax-spatula. Too much oil on the face of the mold will cause bubble holes, due to the oil collecting and forming small drops.

In making this replica, the inside of the mold (that is, that part to be filled and covered with plaster-paris) is brushed with a thin coat of olive-oil, then the liquid plaster is spooned and brushed into the mold, and the mass built up until a base at least half an inch thick is secured. (The top of this cast is really its base.) As soon as the cast has fully set, it is removed, a little tapping and wiggling showing the line of cleavage between the mold and the cast; and a knife-blade inserted into the crack readily separates the two parts. Should any of the plaster cream have overflowed and adhered to parts not oiled, it can be trimmed away with the knife.

This replica (Fig. 13) is set aside for twenty-four to forty-eight hours, in order to dry out thoroughly, when it is painted over with a thin solution of paraffin in gasolin and finally colored to nature with theatrical grease paints. If the color scheme of the nose is complex, this may be duplicated upon the plaster with water-colors or oil paints before the coating of paraffin is applied. Any small defects in the replica, such as bubble holes, cracks, and so on, are filled in with plaster cream and smoothed off; rough irregularities are to be trimmed down. Lastly, the replicas are trimmed or squared to shape and marked for identification while still damp, as the plaster then can be more easily worked.

As a rule, we make two or three replicas, one of which is kept as a record of the "before treatment" condition, while the others are used in preparing models of a nose of the shape which the patient would like to have, as well as in studying out the possibilities and probabilities of the sort of nose he can have. Occasionally, to facilitate matters, a replica of the entire face is made (Fig. 14), whereby we are enabled to gauge the proportions, position, and relations of the nose to the rest of the features.



Fig. 13. Here is the completed cast of the nose.

In making these models, all measurements, estimates, calculations, artistic idealizations, speculations, and other brain-work should be gone through with before the plaster cast is touched. Concavities are built up with nose-putty or modeling-compound; convexities, tuberosities, and enlargements are reduced or eliminated by cutting and scraping away. The finished model is colored to life with grease paints.

Drawbacks and Other Considerations

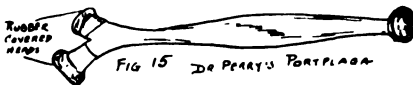
While constructing such a model, the surgeon must constantly bear in mind the restrictions that hamper his work; the quality, quantity and location of the tissues at his command; the influences within and without the patient; the limitations of surgical art; lest his own enthusiasm and the importunities



Fig. 14. A replica of the entire face.

of his patient lead to the construction of an ideal which cannot be reproduced in the features of the patient. While it is true that many of the results of cosmetic surgery are most gratifying and often amazing as artistic triumphs, it is equally true that not a few results are most grievously disappointing and bring down wrath, anathemas, condemnation, and even brutal cuss-words upon the head of the well-meaning surgeon who was over-zealous in his prognosis.

One cruel fact that has been noted in this plaster-paris modeling of noses is, that the



feminine nose differs not at all from the masculine as to relative size, proportions, and shape; whatever differences there may be can be attributed to finer texture and color of the skin—owing to weather-beating on the part of the male and better care and toiletage of the female. By which assertion it is intended to convey the idea that some women have large, coarse noses and that some men have dainty, refined probosces.

To illustrate some of the methods of treatment employed in the several forms of nasal-bridge deformities, let me adduce a few illustrative cases.

Correction of a Deflected Nose

Case 1. A right lateral deflection of the nose, without any history of traumatism. An examination showed a slight dis- or misplacement of the nasal bones, which may have been congenital, but most likely followed some forgotten injury in childhood or perhaps during infancy. There was also some deformity of the septum.

By means of submucous methods, the septal trouble was overcome, so that upon the straightening of the nasal bones the septum would come into normal relation with the other parts of the nose. Next came the task of bringing the nasal bones back into proper position. This may be done by using Ash's forceps to break the bones loose from their maxillary articulations or by using a lead mallet and breaking them loose by sharp blows upon the sides of the nose. These blows are not delivered directly upon the parts, but are transmitted through some intermediary substance. Some operators use a wooden block for this purpose. For some time past, I have been using what I call a portplaga, as illustrated in Figure 15 (*porto*, to carry; *plaga*, a blow or stroke); an instrument which I devised for this purpose, and which is most convenient and useful in transmitting the force of a blow to a circumscribed region or in some special direction or to some spot difficult of access.



Having loosened the articulations, manipulate the bones into their proper positions and relations in the median line and maintain them there by means of an external splint. The Cobb splint or Eisendrath's modification thereof forms a fine splint for this purpose, as it is adjustable to the individual requirements of any patient and can be used repeatedly. The case is now treated as any other fracture of the nose would be.

In many cases of lateral misplacement of the nasal bones, there is a lateral deviation of



the septal cartilages and other soft parts; in which case these conditions are to be met and overcome as detailed in a previous article. (See CLINICAL MEDICINE, Aug., 1915.) In cases presenting a double curvature or a twist, the deformity is treated by operating upon both deviations at the same seance, bringing the parts into correct relation and then applying the Cobb splint.

A Case of Congenital Concave Nose

Case 2. A concave nose of the congenital variety, several of the subject's brothers and sisters being similarly adorned. The personal history as to traumatism, tuberculosis, and syphilis was negative, and, as the tissues were in good condition, it was decided to remedy the defect by implanting a cartilage graft from the rib.

Across the bridge of the nose, on a line with the pupils, an incision was made. This incision is made slightly above the place where spectacle bows or eyeglass mountings will

rest or press in after years; for, I have seen several cases of epithelioma which I felt sure had arisen from the irritation of these optical adjuncts. The dissection consists in an undermining of the skin, and extends half an inch above the cut and as far below as may be necessary to include the concave area; and it is effected, without enlarging or unduly stretching the initial incision, by the use of specially shaped plastic-surgery knives. This wound now is covered with a protecting pad of warm moist gauze.

Through an incision over the cartilage of the eighth rib, a piece of cartilage of sufficient size is removed and then placed in a bowl of warm, sterile, normal saline solution. The costal wound is then closed again.

From the plaster replica and model, the surgeon previously has formed a fairly accurate idea of the exact size and shape the graft should be. With scissors and knives, the piece of cartilage is cut and trimmed to meet these requirements and when ready is



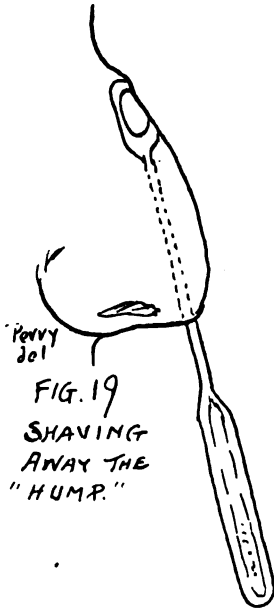
Fig. 18. Side view of a nasal cast.

slipped into place into its destined site underneath the skin. There should be from a quarter to half an inch of the graft above the incision and the rest below it. Carefully adjust the graft, to insure the best possible cosmetic effect, and then firmly anchor it to the *underlying* tissues by means of fine catgut sutures or with steel pins. If the graft seems too large or of incorrect shape, do not hesitate to remove it and trim it into correct size and shape. Having anchored the graft, the wound is closed cosmetically, dressed artistically, and the parts are allowed to heal by first intention.

Grafts of this kind occasionally excite a hyperplasia or may be absorbed; and these are sequellæ which the surgeon cannot foresee, cannot prevent, cannot control, and cannot always satisfactorily overcome, hence, are possibilities which the patient must understand.

Exceptionally, Paraffin Prothesis Is Indicated

Case 3. A nose presenting a small but well-marked concavity, large enough to cause



mental perturbation, but, yet, not large enough to justify a graft. The case is one of the few suitable for paraffin prothesis. Under aseptic conditions, using a special paraffin-syringe and a properly prepared cold paraffin mass, a small quantity of the latter is implanted under the skin and manipulated into such shape and position as will obliterate the disfigurement.

Personally, I have an antipathy against the promiscuous use of paraffin in cosmetic work, because I have seen so many cases where disastrous sequellæ developed after the work had been done—sometimes months afterward—and which were due solely to the paraffin. Hyperplastic growths, color changes in the skin, and dislocations of the paraffin implants are the commoner causes of complaint in cases which have come to me to have the paraffin removed or for some other remedial operation. And these adverse results occur in the work of those presumably expert in the technic, just as often as when

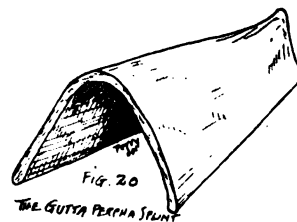
done by amateurs; they seem to be owing largely to causes as yet little understood.

Case 4. A case presenting a malformation of the nasal bones, as shown in Figure 16. The nasal bones have no muscular attachments, being intended to give form and strength to the nasal cavity, and any deviation from the typical normal may be regarded as a malformation, even though there be no disease or displacement. In this case, the overdevelopment is so marked and so at variance with the ideal and with the other parts of the nose that necessarily a deformity results. To remedy this cosmetic defect, a median incision was made over the bones, through this the superabundant bone was chiseled away, and the fresh bone edges were smoothed up with a bone-burr or a bone-file. The wound was closed cosmetically and an aristol dressing applied. The final result is shown in Figure 17.

Eagle Beaks and Broken Noses

Case 5. A case of "Roman nose" (Fig. 18), from which the owner desires to have the convexity eliminated. Here, the osseous factor enters only slightly, and because of the cartilaginous element it is one which lends itself very favorably to the subcutaneous method of operating.

A small incision is made into the subseptum, near the tip, and the opening extended upward, subcutaneously, by means of a two-edged pointed knife, until it reaches just above the beginning of the "hump." A



spoke-shave is now passed up and the superfluous cartilage trimmed away (Fig. 19). If it is necessary to remove any bone, this can be done with the small chisels. When sufficient tissue has been removed to reduce the nasal contour to classic proportions, the cavity of the wound is cleansed, swabbed with aristol powder, and the external opening closed with a single fine stitch. The loosened parts are kept in apposition by means of a splint of sheet gutta-percha (Fig. 20), molded to shape over the model, and kept in position by means of zinc-oxide plaster strips.

Case 6. A case of broken nose, with the usual consequent deformity following the usual expectant treatment. As a matter of fact, very few "broken" noses are really more than dislocations of the nasal bones, and the failure to replace the bones immediately results in the broken contour. Adhesions eventually develop, so that, when in later years the patient comes for a cosmetic operation, it becomes necessary to break up or cut away these malunions. This can be accomplished by the use of the Ash forceps or, in aggravated cases, by cutting with a chisel, the instrument being introduced through a small incision at the side of the nose. When loosened and restored to place, the parts are held in proper relation by means of the Cobb splint.

Case 7. "Broken nose." Here, the bones not only are badly displaced, but the septal cartilages are so distorted that the entire upper part of the nasal cavity is occluded

by the hyperplasia consequent upon the traumatism. Several methods of operating have been devised for opening the nasal cavity to remedy such a condition or for the purpose of removing neoplasms, and the one which appeals to me as giving the best cosmetic results in this case is that of Rouge.

The upper lip is drawn up, an incision is made along the gingival junction and as much of the nasal structures loosened from the superior maxillæ as is found necessary to fully expose the field of repairs. With a free hand and a clear field of observation, the surgeon may now dissect, chisel, and cut until the structures are fixed to his liking. The nasal tissues are then replaced and carefully sutured with fine catgut; the labio-gingival incision is closed with horsehair or fine silkworm gut. A retention-splint of molded guttapercha should be worn for several days. Such an operation leaves no visible scars.

Proper Care of Automobile Tires

Suggestions for the Doctor Who Owns a Car

By A. L. BENEDICT, M. D., Buffalo, New York

MOST automobiles placed on the market are equipped with tires of good quality, and, so far as personal experience and observation go, there is comparatively little difference between the various tires recognized as standard. As to those not so classed, one can find some of equally good quality; but, others are very poor.

To begin with, an automobile tire should be reasonably thick and heavy and smooth on the inside. The rubber itself should be rather hard, but not to the degree of presenting a brittle surface, nor so soft as to be cut by a stone unless the latter is very hard and presents acute angles. There is not so very much difference between inner tubes. Minor blemishes do not count for much, so that a cheap "second" tire frequently may give good service proportionate to its lower cost.

What should be expected of a tire? As a rule, roughly speaking, one of small size should last on an average for about a 5000-mile service, and inner tubes about two or three times as long. Obviously, the larger the diameter of a tire, the fewer number of times any given sector of it comes in contact with the road for each mile; hence, larger

tires wear longer than smaller ones, although not proportionately longer with reference to the cost. The same statement as to increased durability holds good as to the section, or caliber, diameter, but merely because such tires are usually thicker and stronger. Comparing small and medium-size tires, the latter should wear about 50 percent longer and cost about twice as much.

The average mileage-cost for small tires, including inner tubes, should be just about 1 cent a mile for the four wheels. If the rear wheels have tires of greater lumen, they will last a little longer, so that the average is just about 1-4 cent a mile a tire. There will be enough saving on this average for outer shoes to cover the expense of inner tubes. Medium-size tires cost about 1-3 to 2 cents a mile per set of four, and the expense increases for large cars, which practically always need corrugations on the surface of the tires, up to about 10 cents a mile for the set.

Oversize Tires

Many assert that manufacturers put out cars with the cheapest (that is, the smallest) tires that will support the weight with a fair degree of satisfaction. Hence, they ad-

vocate using oversize tires. On the other hand, oversize tires are more difficult to remove and replace, and it is a fair assumption that the manufacturers know their business. Oversize tires certainly cost more, absolutely. Whether they cost less relatively to mileage is an open question.

For heavy cars, corrugated-tread tires are undoubtedly a safeguard, perhaps a necessity. They cost more initially, and they wear smooth so, that, when corrugations are really needed, the tires in use must be discarded before they are actually worn out. The corrugations do not entirely take the place of chains, while chains are particularly hard on this kind of tires. For small, light cars, plain, smooth tires are the cheapest, the easiest to repair, and perfectly safe if one will use chains when necessary. Except for soft mud, deep snow, and icy ruts, chains are not necessary for a small car, if one will limit the speed to 15 miles on straight city running, run into neutral at not over 10 miles an hour for turns or on approaching a crossing, or at any time when a quick stop may be required. With these precautions, chains are not necessary simply on account of rain, light snow or ice in the absence of ruts, unless there are heavy grades.

Tire-stuffings of every kind have proved unsatisfactory. They are heavy and speedily lose their original elasticity. Except for guarantee against trouble in an emergency, such devices do not save expense. Solid and cushion tires are heavy, do not prevent jarring, and, hence, tend to loosen bolts and screws, and are especially wearing on the engine. As to puncture-proof pneumatic tires, there is, in the first place, no such thing; in the second place, while a virginal tire is highly desirable, a mechanic insurance of virginity involves undesirable features.

The only thing in nature that approaches perfect elasticity—remembering that the word theoretically and practically implies instant recovery of shape, rather than softness and gradual restoration of shape—is a gas under pressure. There is no satisfactory substitute for the pneumatic principle, and there is no method so perfect as to secure absolutely against leakage.

Tire leakage may be classified under the head of (1) punctures, (2) blowouts, (3) valve defects, and (4) miscellaneous causes.

Punctures

Punctures may be largely avoided by watching the road; encouraging and practicing the habit of picking up nails, and the like;

avoiding macademized state roads, which have been said to be paved with Indian arrowheads and oil; and avoiding, if possible, the rear approaches to garages and repair-shops and to farm-buildings. After running over glass, state roads or any other suspicious pavement, inspect the tires and pick out bits of glass, stone, tacks, and the like, if any are found, as these may work in deeper. When a puncture occurs, stop immediately.

The beginner may not be aware of a puncture or flattening of a tire, especially if he is on the front seat and the trouble is with a rear tire. Any sibilant or explosive noise is significant, and there is a peculiar bumping that is not of the same tempo as the kicking of a unit of the engine, but more regular than the accidental bumpings caused by a bad road, although almost exactly imitated by certain wavy brick roads. If the tire sticks, run a few feet further on the flat tire, but only after removing the cause of the puncture. One of the writer's friends boasted that he could run a whole evening on a flat tire without sustaining any damage; shortly afterward, however, a garage-man told of mending seven separate punctures from the same nail in his tire. Occasionally, by good luck, the puncture can be readily located, in the upper part of the tire, and the leak in the inner tube repaired with a gasolin patch after removing a small segment of the outer tube, without even using the jack or removing the valve stem.

Always look for a puncture on the opposed surface of the inner tube. A large opening in the tube or a multiple puncture is better treated by vulcanizing. Remove the entire inner tube, put in a new one, and make the repair at home or at a garage. If the wheel and tire are dusty or muddy or wet, make clean before removing them, using a brush, duster or cloth, according to circumstances. If any dirt, broken glass, pebbles or the like has come between the outer and inner tubes, or if the talc has caked, wipe it out. Sometimes, the finger will detect an imbedded tack, broken needle or spicule of flint, which will cause fresh trouble, and it may be that such a lesion is the real cause of the puncture and that a nail, large sharp stone or cut without a foreign body has not penetrated. Never replace the outer shoe until the inner tube has been dusted thoroughly with talc and inflated, so that it presents no creases to catch under the rim.

Blowouts

Blowouts are due to defects in the outer tube. While they often start from a puncture

that admits water and gradually allows rotting and fraying of the fabric, they may occur without any lesion of the protective rubber covering, and may consist of a rip along the edge of the beading. The inner tube may explode or may receive a minute puncture through a hole in the outer tire that is not large enough to threaten its retaining strength directly. A good-sized blow-out practically ends an outer tube. Unless caused by a local defect in an otherwise good and little-worn tire, it does not pay to repair them by inserting a new section, retreading, sewing two tires together or by any other device that costs any considerable amount. Such repairs do not usually give additional mileage proportionate to the expense, especially if we estimate the value of the old tire as junk at 50 cents, or 200 miles, and if we bear in mind the increased vulnerability and labor involved in using an old tire.

The ordinary blowout patch is of value to prevent a blowout following a puncture, or to allow a few more miles to reach home, but it is worthless in case of a good-sized blowout. Blowout patches that are really efficient, that will give as much as 500 or 1000 miles additional service, and that will allow a tire to hold till the hole becomes almost 2 inches in diameter, but which are not of much use against a longitudinal rip along the beading, may be made as follows:

Cut an old outer tire into lengths of 1 to 2 feet, rejecting parts that are much damaged. Cut off the beading with a heavy sharp knife, beveling with the first cut so as to leave a fairly sharp edge. Bevel and round off the ends similarly, so that the rubber-covered portion is shorter than the fabric. By holding the edges and ends between two pieces of board, with about 1 inch of tire projecting and then clamping in a vise, complete the beveling with the knife and rasp so that the patch, as spread, has a broad surface of fabric, frayed soft at all edges and projecting a little beyond the rubber. The rubber need not be cut off except along the edges and ends.

These blowout patches are stiff and thick enough to hold the tire for a good many miles and can be used over and over again. Do not make them too short, both because a blowout needs a good deal more protection than appears possible to the novice and particularly because a short patch will twist and cause further ripping and will bump on the road.

Valve Defects

Valve defects are naturally thought of when a tire leaks gradually or after repairing a

puncture. They are not, however, very common, the chances being in favor of a concealed puncture as from a spicule of flint or pin or the like imbedded in the outer tire and not visible. On the road, they are easily detected by the spit test, that is, simply wiping a little saliva over the valve-cap. Sometimes the valve-plunger projects, so that when the cap is applied it is forced down. If it is cut off short, however, the tire-gauge will not register. Sometimes the valve is dirty or gummy or the spring is caught. Unscrew it, using the top of the cap as a screw-driver, and wash it with gasolin. Sometimes the valve leaks around the screw-thread. A little vaseline will remedy this defect, although it is likely to gum up the plunger later.

At home or in the garage, valve leaks are best detected by turning the wheel so that the valve-stem projects directly downward and then inserting it into a small test tube or vial containing gasolin. Always carry a few extra plungers in reserve, but not more than for the extra inner tubes necessary, as the plungers deteriorate. When one is found defective, throw it away, so that no one can find it again; and, in buying at garages on the way, be sure that a mechanic does not sell you a plunger that someone else has discarded.

Miscellaneous Causes of Leaks

I have had one tire that blew, not out, but off the rim. Such an accident seriously injures the inner tube. It results from an original defect either in the tire or the rim. An inner tube may chafe in its carrier. To prevent this, deflate thoroughly, fold three times, smoothly, cover with an old stocking, arrange the valve-stem and metal piece pointing outward, then inclose in paper or rags, and now insert into the regular carrying-case. Two inner tubes may be put into such a case if care is taken that the metal parts do not chafe the other tube. Never carry extra inner tubes in the original pasteboard boxes. An inner tube may also gradually puncture against a rough seam in the outer tube or against grit or caked talc.

If partially inflated, as previously mentioned, before inserting and if reasonable care is taken with tire-irons there is little danger of injuring inner tubes by removing and replacing tires. If, when an inner tube is removed, it shows markings, look for the cause on the inside of the outer tube or the rim. For example, a hole in the rim may be filled with putty or also a rough seam may be covered with a piece of cloth or a rubber patch, or a ridge may be rubbed down.

One of the meanest leaks is due to separation of the valve-stem from the inner tube. This can usually be detected, like any small leak, only by immersion in a tub; or, rather, if it is easily detected, it is difficult to repair it. If the leak is small, unscrew the parts holding the valve-stem and slip a patch over the stem, making the hole in the patch as small as possible. Do not try to use a gasolin patch for this purpose, but use cement, freshening opposed surfaces with sandpaper and gasolin. Screw the parts down on the valve-stem while the cement is fresh and hold the edges down until the cement has set.

Emergency Outfit

Remember that your leak may occur in the mud and after dark. Be sure to have some available source of light. If you have a storage battery, a trouble-light is easily arranged for, and it may be carried in a mailing-case. If not, you cannot very well keep your engine going to run your light during the time occupied in repairing a leak. A pocket-light or one-dry-cell lantern will answer fairly well. At least make sure that you can unscrew a kerosene lamp. Always keep overalls or an old suit of clothes in the car, also rubbers; besides an old piece of rubber sheeting or oil-cloth or, at least, a few newspapers to put down on the dirt. Besides the ordinary outfit, you will often need a third tire-iron, for a stiff tire, and two forceps, with which to separate the two parts of the dustcap. Then, sandpaper, a bottle of gasolin, extra patches, cement, clean rags, blowout patches, brush, talc, and tire-dough will be needed; also a large round nail or some similar piece of metal for applying the tire-dough and for cleaning cuts in the outer tube.

Inclose the gasolin and talc in mailing-cases or some similar strong box, to prevent breakage and leakage, and assemble all necessities for this work in one receptacle, such as an old satchel or large box. Put all parts where they cannot get lost or blown away or stepped on, or, if you have plenty of passengers, make each responsible for a set.

General Hints as to Repairing Tires

Solutions of rubber (?) are sold, with the idea that by weekly applications with a brush the wear of the outer tire may be compensated. You will probably buy only one can, and what is left of this may be used on a fence. Gasolin vulcanizers are good for repairing inner tubes. I have never succeeded in vulcanizing scrap raw rubber into holes in outer tires. Unless for a tour, vulcanizing

should be done at home, simply changing inner tubes on the road or using gasolin patches.

In vulcanizing over a large hole or long cut, where patching is not practicable, be sure to introduce talc within the tube to prevent sticking of opposed surfaces. This is not likely to occur in case of a small puncture, where the vulcanizer is used as an alternative to the gasolin patch. If, however, the talc has been forgotten or neglected because the vulcanizer has been sold with the assertion that it is unnecessary to introduce talc, the stuck surfaces can usually be worked apart by rubbing and picking under moderate inflation. Cement will be used for patching around a valve-stem to close, watertight, a hole through the outer tube, and for setting tire-dough. It is not usually wise to spend too much time in using tire-dough for small cuts that do not penetrate to the fabric. Tire-dough is excellent, however, for repairing deep cuts and lacerations into which the finger can be introduced.

The secret of success lies in thorough cleansing with gasolin, applied on a fine rag over the end of a blunt nail or similar piece of metal. Be careful not to puncture the inner tube. Wipe until the rag comes out clean. Then squirt in some cement and work in the tire-dough, previously softened with gasolin to the consistence of masticated chewing-gum or putty, using the nail to squeeze it in, and finally patting and rubbing down with the blade of a knife—a spatula-blade being superior.

It is better not to run the car till the cement has set. This, of course, does not help the fabric, but simply keeps out foreign bodies and water. If the hole in the fabric is more than a stone prick or small nail hole, insert a canvas patch. For large tears in the fabric, use a patch from an old tire, as described.

Tire Conservation

The writer is not particularly impressed with the idea that a puncture through the outer tire leads to rotting of the fabric from admission of water. Blowouts may appear at other places, while the fabric around an old puncture remains intact. In dry weather, the tire is likely to be used up before rotting occurs, but in rainy weather and in spring, while only a few miles a day are run, rotting from dampness is a serious factor.

Neither is underinflation, not of a degree to be easily observed by inspection or kicking the tires, a noticeable cause of de-

preciation. A writer in *The South African Medical Journal* tells of good mileage made at an average pressure of 45 pounds instead of 60, with much running over roadless regions. Neither do tires heat noticeably or increase the pressure by rapid running. An old or weak tire should not be inflated to within 10 pounds of the standard pressure. Overinflation, which is common with storage tanks and at the hands of mechanics, may rupture the fabric in a moment. No garage-man will admit this, but he will ascribe the subsequent short mileage to underinflation. However, it is wise to maintain the standard pressure for new tires and to test—and inflate if necessary—at least every week; using the tire-gauge, and allowing one pound per stroke of the foot- and hand-pump and watching machine pumps or tank pressure carefully.

Overloading is a marked cause of tire wear. Passengers do not realize this fact and are prone to consider that the number of persons and suit-cases that a car can carry is limited only by bulk. Overuse of brakes is also a considerable factor. Remember that the brake ultimately acts between the rear tires and the ground and that, if the wheel slides from sudden braking or because it cannot hold against mud or ice, the tire is being shaved down. The effect is immediately visible. There is so much less rubber to protect the fabric and the latter has also been strained and heated.

Wire wheels are said to diminish the strain on tires. The only objection to them is initial expense and difficulty of cleaning. Shock-absorbers and graphite and oil between the leaves of springs save the tires just as much as they do the riders—perhaps more, because the tires are being hit between the ground and the heavy weight of the car.

A small clincher-tire can be removed as easily as a demountable rim. A detachable wheel saves time on the road, but the ultimate

repair of a tire must be made sometime and by somebody. If you do the work itself, you lose whatever additional time is necessary in changing wheels. Covers for outer tires, interlinings, extra-weight inner tubes, and the like may lessen the danger of actual leakage of air at any given time, but, on the whole, they cost more than they save in mileage.

Alinement of wheels is an important matter in saving tires. Unless there has been a collision or heavy jar, the rear wheels do not easily tend to get out of alinement; on some cars, the front wheels do so very readily, require frequent measurement between the front and back of the circumference of the rims, at the level of the axle—which requires more skill and training than appears—and adjustment of the rod governing the distance. This is particularly true of cars stamped out like coins. Alinement should be tested by a reliable mechanic shortly after purchase and after any collision or strain or, if the ball-and-socket joints rattle at all.

A Suggestion

In conclusion, it may be suggested that it is better to get an average of 4000 miles from tires, and have comfort, than to get 5000 miles, with constant worry and effort. Do not believe all the statements made by professional advisers of motorists, nor waste too much money in buying devices supposed to prolong the life of tires. Do not try to squeeze a few miles extra out of a tire, and damage an inner tube, besides giving yourself the work of an additional removal of a tire. I have done this twice, gaining 10 miles, 2 1-2 cents, and losing a patch in one case; gaining 2 miles, 1-2 cent and spending 50 cents for vulcanizing a split inner tube in the second case. This is not economy, not even successful stinginess.

(To be continued.)

I LOVE to see enthusiasm. A man should be enthusiastic about that in which he is interested. I would not give two cents for a man who works for money alone. The man who doesn't get some comfort and some enthusiasm out of his daily work is in a bad way. Some men are almost irresistible—you know that. It is because enthusiasm radiates from their expression, beams from their eyes, and is evident in their actions.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

Medical Director of Mudlavia Sanitarium

[Continued from page 233, February issue]

AS a cause of extreme wasting of infants having diarrhea and vomiting, Keller has suggested *acid intoxication from the intestines*.

Diarrhea is sometimes associated with an increase of intestinal decomposition. Hanot and Bouchard looked upon the enlargement of the liver, which frequently accompanies chronic dyspepsia, as a result of intestinal intoxication; founding their theory on animal-experimentation by Boix, who claims he produced *cirrhosis of the liver* by giving, for a prolonged time, food containing acetic acid and butyric acid.

Chlorosis, and certain forms of *anemia*, are, most closely of all blood diseases, related to decomposition in the intestines. It is well known that chlorosis is often accompanied by a tendency to constipation, and this symptom—or rather the hypothetical decomposition process which attends it—is, according to many authors, the fundamental cause of the disease.

We must also admit the clinical coincidence of gastrointestinal wrongs with *skin eruptions*.

The nervous system displays most of the highly varied symptoms that clearly result from intestinal decomposition. At one end of the chain, there is simple headache, and at the other end stand coma, convulsions, collapse. The most common forms may be considered under these headings: First, the general phenomena common to severe constipation; second, tetany; third, epilepsy or eclampsia; fourth, psychoses.

Included in the general phenomena observed in severe constipation are the nervous symptoms which accompany *chronic*, or habitual, constipation—an out-of-sorts feeling, headache, lassitude, neuralgia, giddiness, ill-humor, and so on. *Tetany* is doubtless due to decomposition in the stomach. *Epilepsy* and *eclampsia*, having been sometimes associated with marked acetonuria, Von Jaksch and Lorenz and others have ascribed their cause to intestinal autointoxication. As for *psychoses*, there has been much discussion lately, especially in France, anent the connection between it and intestinal decomposition, and out of this has sprung the generally accepted doctrine of "visceral psychoses."

We often see patients complaining of debility, who tire easily, are irritable and despondent, yet, in whom we can detect no organic disease. Nevertheless, their symptoms and their dusky complexion point unmistakably to autointoxication—effete matter in the blood in excess. The lips are blue, the features blurred (like an indifferent photograph), while little arterial twigs can be seen on the cheeks and nose, suddenly piercing the skin and pervading its surface, their distended condition telling of arterial fullness. The arteries are usually thickened and sometimes are hard, the blood pressure being increased. The heart is often enlarged; being hypertrophied or dilated. The urine shows a high degree of acidity and a large amount of indican. The bowels are usually constipated or they may, at times, be irregular, as the muscular fiber of the bowel shares in the malnutrition of all the muscular tissues. Flatulence is not rarely also present; and this adds to the disturbance of the heart, producing palpitation, breathlessness, and nervousness.

After many years' experience in the treatment of chronic diseases, I am of the opinion that no chronic disease can be successfully treated without a great deal of attention being given to the gastrointestinal tract and to the eliminative organs generally. The bane of sedentary life and the principal cause of chronic diseases—more important even than pyorrhea or pus in the tonsils—are visceral inertia, constipation, and autointoxication.

Gout, arthritis deformans, psoriasis, the so-called diseases of metabolism generally, are all aggravated, if not directly due to the above-mentioned conditions. What is diabetes? A disease due to dangerous disturbance of metabolism. Its treatment? Proper diet. What is Bright's disease? Crippled or overworked kidneys on a strike, caused in the majority of cases by excess in eating—especially of the proteins—worry and pessimism; and its remedy, as well as prevention, is: less flesh, less fret and fume, and more fruit and fun.

In the granular kidney, it sometimes is a question whether to call the disease gout or Bright's disease. The theory that the minute

blood-vessels supplying the kidney are plugged up with bacterial emboli—that nephritis is purely an infective process—may be true, but I believe that renal degeneration may be a consequence of long-continued elimination through the kidneys, of products of faulty digestion.

If these products are cast out of the blood, the kidneys suffer and become granular; if they are retained in the blood, they may set up gout or arthritis deformans; in many cases, both the kidneys and the joints are affected. According to the stage of the malady, we might speak of the "liver being at fault" or of "renal inadequacy" in the early stages; or "this is a beginning arthritis deformans," or "the arteries are atheromatous," or "the kidneys are diseased," or "there is gout," or "arthritis deformans" or, finally, "chronic nephritis" is present, according to the prominent state or the point from which the complex pathological process is looked at. One doctor might choose one phase, another prefer another, and each be right. Consequently, when I hear that such a person has "Bright's disease," I begin to speculate, "what is the matter with him?"

The condition of the gastrointestinal tract, elimination, diet are all such important matters in the successful treatment of chronic diseases that you will bear with me, I am sure, if I devote considerable space to these subjects before taking up the treatment of the various chronic diseases.

The Problem of Diet

As soon as we have accepted—as we must at the outset—the scientific (and, as well, the moral) dictum that "so much of food and drink is to be administered to a patient as will refresh and not oppress the powers of the body," we are at once confronted by what appears to be an impossibility, namely a correct estimation of the different nutriments and their respective digestibility, in addition to the digestive capacity of each individual.

But, at this point we must remember that the practice of dietetics rests upon the accumulated experiences of mankind, that it is not a new problem to be solved by a series of algebraic equations, but that much of this knowledge has already been made available for us through a long acquaintance of the human mind with its practical aspects; and, furthermore, that out of this ages-long familiarity there has emerged a first and all-important law for our guidance, which law is that enjoining temperance—a word which stands for the affirmative "*enough*" as

strongly as it does for the negative "*not too much*." However much in the dark we still may be as to the proper course to steer between these landmarks, we do know that the landmarks are there; and this is the first essential step toward finding them, even though we already know that their positions in the life-stream vary with the passing of every vessel between them.

To begin the consideration of this question at its logical basis, we should doubtless understand, as a premise, that the subject of diet neither stops nor begins with the individual, but that the life of the race is alone the proper criterion, and that only the future can speak with authority of any present deviations from such rules of diet as have been established by our fathers by testing, rejecting, adopting. For, it has already been shown that a diet that may make for a seeming full vigor and well-balanced living in one generation may not, in actuality, suffice to carry on the germ of full vigor to the next generation. Of course, it would appear, at first glance, that a vigorously nourished organism would be better able to procreate its like than will an organism of inferior energy; but, experience demonstrates that the vigor of the parent cell, the germ-cell, may be something quite different from the vigor of present living tissues and organs; the latter merely exhibiting in detail the powers peculiar to each, while the parent cell combines and concentrates within itself the potencies of a whole organism. Consequently, it is anything but an unusual occurrence for the physically and mentally weak to spring from the loins of the apparently physically and mentally strong. That science cannot escape or evade these fundamental facts, adds immeasurably to the complexity of the subject of dietetics; for, it is food that has formed the soil from which all men have sprung, be they weak or strong.

The Amount of Nutriment Needed By the Body

The lowest estimates of the food necessary for the human body put the proteid required at about 29 Grams. In order to supply the calories required for the various vital processes and to make up the loss of heat by evaporation and radiation, there must be consumed about 50 Grams of fat and 300 Grams of carbohydrates. Although every Gram of fat is, theoretically, worth somewhat more than 2 Grams of carbohydrate, there is so much lost, through natural lack of digestive power, when the limit of 100 Grams of fat is reached, that this ratio fails; and a ration of

150 Grams of fat is attended by great waste and also by disturbance of the digestive and absorptive power in general, while in addition there is the possible danger of poisoning from fatty acids and the formation of acetone. Therefore, leaving out water, salts, iron, and the like, the organic requirements of the body must, actually, amount to much less than 500 Grams of water-free chemically pure proteid, fat, and carbohydrate; and this allows for reduced oxidation in disease, and a liberal supply of external heat and use of clothing, to preserve the internal heat.

Now, the first point in combining a diet (taking for granted this knowledge of the average needs) is, to ascertain the previous feedings and habituations of the patient. There is evidently something that he has been taking that should either be stopped or modified; though this does not always follow. As a rule the articles of diet that come in for prohibition are the semimedical ones, principal among which are: (1) Alcoholic beverages, tea, coffee, chocolate, tobacco, spices, vinegar; (2) foods that are too hot or too cold; (3) those containing oxalates or other toxic chemicals; (4) those rich in purins; (5) foods tainted and fermenting or rancid (6) those containing excess of innutritious substances; and (7) those which, though good in themselves, would work against a proper metabolism in this particular person.

Write Your Dietetic Prescriptions

It is as necessary to follow the plan of a written prescription in dietetics, as it is in drug-therapy, bringing the formula into terms of proximate principles. From the practical standpoint, these include water, sodium chloride, iron, iodine (as in thyroid extract, lecithin); the three organic nutrients—proteid, carbohydrate, fat; and gelatin, as a substitute fuel-food. In theory, and to some extent in practice, the following must also receive consideration: calcium, magnesium, potassium, sulphates, phosphates, purins, and extractive matters generally; and besides these, as more or less inevitable accompaniments of raw-food materials, various toxins and innutritious substances. Unless we are dealing with a lack to be made up, as in anemia, or with a surplus to be taken off, as in obesity; or, unless some particular metabolic disorder, such as diabetes, makes bad that which is usually good, the prescription can be formulated approximately in the following terms, whatever the character of the disease:

Water, 2500 Cc. (about 2000 Cc. as such, or at least in the form of some watery beverage);

Salt, 10 Grams;

Iron, 10 centigrams;

Proteid, 50 Grams, or even as high as the earlier standard of about 100 Grams;

Carbohydrates, 300 Grams;

Fat, 50 Grams. (The two last mentioned being interchangeable, within limits, in the ratio of about 2 parts of fat to 1 of carbohydrate, while gelatin may be substituted for carbohydrate up to about 50 Grams, in even proportion.)

With reference to the vicarious function of fats and carbohydrates, there is never any need of eliminating such amounts of fat as are present in ordinary foods without being recognized as such, as, for example, the 1 percent that is in skimmed milk, the 2 percent in fish, the 6 percent in breakfast foods, the 9 percent in crackers, and so on; percentages which make it possible to give as much as 50 Grams in a diet that the laity suppose to be fat-free. Of this invisible fat, it is difficult to avoid giving as much as 10 Grams, while 30 to 50 Grams can readily be added by inunction (although we cannot be certain of its being assimilated).

About all of the ordinary foods contain, as I have pointed out, the three organic ingredients in different forms and proportions, from which fact arises the difficulty of deciding upon the amount to be administered of the respective foods; there being likely to occur in some of them too many or too few of some one or more of the ingredients. But, by restricting ourselves to a certain number of foodstuffs, we may make up the proportion in accordance with the following general law: When the number of independent equations equals the number of unknowns, the latter can be determined. When these equations are actually worked out, at least one of the unknowns is likely to become a negative quantity; for, while we can always determine algebraically the quantities of certain foods required, the practical result invariably indicates that there should be subtracted from the dietary such an amount of proteid, fat, and carbohydrate as is contained in a certain amount of one of the foods; and this is, of course, impossible.

Therefore, in transposing a primary prescription of proteid, carbohydrate, and fat into nature's approximate galenicals (the natural foodstuffs or even proprietary foods), we must proceed by rule of thumb. For example, let us take the proteid ration, which cannot be replaced by carbohydrate or fat and is the most definite of the three.

If we use pure proteid or lean meat or meat-extracts or even milk, all of our raw material will be exhausted in administering the proper ration, without going further than a beginning on the requisite quantity of carbohydrate together—although in milk the proportions of proteid and fat are so nearly equal that it is easy enough to furnish sufficient fat with the proteid. Thus, the difficulty is, to give nearly pure carbohydrate or mixtures of carbohydrate and fat for the remainder of the mixture; for, while theoretically this is easy, since we have olive oil, butter, clear salt pork, and the like, as well as the various sugars and syrups, such as corn-starch, sago, tapioca, and the like, in practice such a diet rarely proves tolerable. In the cereals, including breadstuffs, there is a nearly correct proportion between proteid and carbohydrate, the ratio being from 1.4 to 1.7, and it is easy to add a little sugar or butter, and the like, to such a diet. There is probably no natural foodstuff which contains the proper proportions of all three of the organic ingredients for an adult, and none that is tolerable that contains the required amount of fat and carbohydrate to add to a food disproportionately rich in proteid.

Meat Is Necessary

For the ambulant patients, as well as for most others, some meat is required, not only empirically, but to take up the iron. In the vegetable foods, the iron content is too small, as a rule, though many stems and leaves contain variable quantities. But such iron-containing vegetables are often contraindicated by reason of their lack of organic nutriment, as well as for their difficulty of digestion and liability to fermentation, holding, as they do, large proportions of cellulose; and, though iron may be added in the form of hemoglobin or some derivative of it or in organic form, we cannot determine how much of it is assimilated. Therefore, in practice, we usually find it difficult to administer enough meat-proteid to provide for iron without increasing the ratio of iron in the dietary. There is not, and probably there cannot be, a strictly scientific, mathematical method of determining the ration needed.

Our Food Estimates Empiric

Such estimates as we have are based on empiricism, the diet being gradually reduced or increased until equilibrium between nitrogen and weight have been secured, at least approximately. Chittenden's method was, to find how little proteid could be given

without apparent loss of tissue. He made no attempt to reduce the bulk or the content of fat and carbohydrate of the rest of the food. But Voit and chemists generally have measured the consumption of food as regulated by a diet moderately restricted. The extreme lack of proteid, and, consequently, of tissue oxidation, as secured by Chittenden's method, seems to have decreased the output of heat and energy in the body, thus diminishing the call for fuel-foods. As yet it is a question which of the two rations is the more hygienic.

The dosage of food, as of medicine, depends on the size of the body, and, therefore, indirectly upon age, sex, and so on; so that with growing children there is a disproportionate need of the depositable food ingredients (proteid and fat) as compared with carbohydrate, which latter cannot be stored in quantities larger than about 250 Grams. Though there is scarcely an analogy of this in the dosage of drugs, there are in their effects idiosyncrasies similar in character. As a given remedy may produce results either much beyond or much short of those intended, so it may be with foods, an obese patient often retaining his fat on an abstemious regimen, while the diabetic, let him eat what and as much as he can, will grow thin. Of course, in all cases the state of the patient's digestion and absorptive powers is a factor which must be closely taken into consideration in arranging his diet.

In administering food, there is no very close analogy to the cumulative effects obtained by the administration of the alkaloids, for, the active organism is capable of ingesting and assimilating a large excess of the various organic foods without giving much evidence of damage; though there may be mechanical effects of a dangerous nature, such as intoxication due to products of decomposition by microorganisms, or poisoning by strictly toxic substances (as purins and oxalates) and toxins arising from bacterial or other chemic change before ingestion.

Food Dosage and Drug Dosage

Though it is true that we cannot always secure the reaction between drugs and the tissues that the prescription is intended to produce, we can generally manage to give in some way the full dose desired, except in the case of drugs acting locally on the alimentary canal, while the dietetist is often unable to administer an adequate dose of food in any manner, especially in the most serious and acute cases; and this difficulty almost always

obtains when, whatever the reason may be, food can be introduced neither by mouth nor by a gastric or superior intestinal fistula. There can never be introduced more than a small part of the organic ration by way of the skin and subcutaneous tissues, and, though it is often mechanically possible to introduce a full ration into the lower bowel, we practically never can secure the retention, for a satisfactory time, of over half the ration during a period of two or three weeks. Even when this half ration is retained satisfactorily (which often it is not, on account of faulty technic), absorption is always deficient and assimilation more than unsatisfactory. Therefore, these and all other like expedients for feeding must be clearly recognized as makeshifts from which not too much should be expected.

The difference between the food requirements of the healthy and active body and those of the diseased is, of course, great, and experiment will probably never be able to adjust it with scientific accuracy, though it

can do much. We know that in certain stages of certain cases of diabetes there is an enormous oxidation of proteid of food and tissues that is clearly not purely compensatory of the failure of sugar oxidation, since it generally can be reduced nearly or quite to the normal by decreasing the ingestion of carbohydrate. But we do not know just how far increase of oxidation in hyperpyrexia compensates for or exceeds the oxidative demands of exercise, nor what influence antipyretic measures, such as light covering in a cool room, bathing, sweating, and the like, have upon the calories needed; neither do we know how far the demand for proteid is modified by the various febrile diseases. Probably the safe rule is, to give nearly the full ration for about every disease, when this can be done, excepting in conditions which render it possible to disregard nutrition altogether for the time being or where there is an obvious indication to reduce one nutriment to another.

(To be continued.)

Vaccine and Serum-Therapy in Everyday Practice

III. Therapy and Rationale of Vaccine Therapy (Continued)

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from page 245, March issue.]

Methods of Administering Bacterins.

BACTERINS are administered by injecting the liquid into the subcutaneous areolar tissue by means of a hypodermic syringe. I insist that an all-glass syringe, with a perfectly fitting glass plunger ground into the barrel—so that no packing of any kind, not even of asbestos, is necessary—should be employed, rather than a syringe with a rubber or leather piston. Personally, I should never feel safe in using one of the latter variety, for fear of producing a "hypodermatic abscess." With an all-glass syringe, perfect asepsis is easily secured. A platinum needle is to be preferred to one of steel, for the reason that the salt solution in which the killed bacteria are suspended in a bacterin soon corrodes steel needles, while it does not affect the platinum at all. I myself use an all-glass syringe of 2-Cc. capacity, with platinum needle. My platinum needle is one and one-half inches long, and seems to

me to be particularly suited to this work. The needle should be of the "slip" variety, into which the tip of the glass barrel has been ground, so that a perfect fit is secured without the use of threads, rubber or leather washers, gaskets, or the like. All these precautionary measures make for strict asepsis.

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obtains when, whatever the reason may be, food can be introduced neither by mouth nor by a gastric or superior intestinal fistula. There can never be introduced more than a small part of the organic ration by way of the skin and subcutaneous tissues, and, though it is often mechanically possible to introduce a full ration into the lower bowel, we practically never can secure the retention, for a satisfactory time, of over half the ration during a period of two or three weeks. Even when this half ration is retained satisfactorily (which often it is not, on account of faulty technic), absorption is always deficient and assimilation more than unsatisfactory. Therefore, these and all other like expedients for feeding must be clearly recognized as makeshifts from which not too much should be expected.

The difference between the food requirements of the healthy and active body and those of the diseased is, of course, great, and experiment will probably never be able to adjust it with scientific accuracy, though it

can do much. We know that in certain stages of certain cases of diabetes there is an enormous oxidation of proteid of food and tissues that is clearly not purely compensatory of the failure of sugar oxidation, since it generally can be reduced nearly or quite to the normal by decreasing the ingestion of carbohydrate. But we do not know just how far increase of oxidation in hyperpyrexia compensates for or exceeds the oxidative demands of exercise, nor what influence antipyretic measures, such as light covering in a cool room, bathing, sweating, and the like, have upon the calories needed; neither do we know how far the demand for proteid is modified by the various febrile diseases. Probably the safe rule is, to give nearly the full ration for about every disease, when this can be done, excepting in conditions which render it possible to disregard nutrition altogether for the time being or where there is an obvious indication to reduce one nutriment to another.

(To be continued.)

Vaccine and Serum-Therapy in Everyday Practice

III. Therapy and Rationale of Vaccine Therapy (Continued)

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from page 245, March issue.]

Methods of Administering Bacterins.

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The dose of a bacterin for a child is from one-fourth to one-half that for an adult, according to age.

In administering the *first* dose of bacterin, the minimum dose, as shown in the dose-table given above should be tried; then, if there is no response within twenty-four or forty-eight hours, repeat the dose, increasing it somewhat.

Bacterin Containers

The various biological laboratories are now putting out the bacterins in very convenient packages. In one form, the maximum dose is enclosed in a sealed glass ampule, with a label giving the number of millions of killed bacteria of each variety contained in it. These ampules ordinarily contain 1 Cc. This form of container is very convenient, and there is no chance of contamination from outside, as they are hermetically sealed. Their only disadvantage is, that, if one does not use the entire content of the ampule, the remainder is a loss.

In using the ampule package, it is first shaken, in order that all the killed micro-organisms may be put in suspension. The elongated neck of the ampule is then broken off, the needle of the hypodermic syringe is inserted into the ampule, the latter is inverted, and the dose desired is drawn into the syringe by slowly drawing out the piston.

Another style of bacterin-container is that in which the bacterin is sent out in a syringe, similar to, but smaller, than those in which antidiphtheric serum comes. They are quite convenient, but considerably higher in price than the package next to be described.

The third, and to me the most convenient and economical package, is a "bulk," or "tank," container of glass, with a rubber diaphragm across the mouth of the bottle. These containers are usually of a capacity of either 5, 10, 18 or 20 Cc. Outside the rubber diaphragm, there is usually placed a felt pad saturated with lysol or some other antiseptic; or, you are directed to place a drop of phenol or lysol on the diaphragm and then puncture the diaphragm through the drop of the antiseptic. If the syringe and needle have been properly prepared with alcohol, as detailed in a previous paragraph of this paper, and the precautions in regard to puncturing the diaphragm of the bulk package just described are followed, there is no danger of contaminating the contents of the container. And there is the very decided advantage of one's being able to withdraw the exact dose desired, without entailing any waste of bacterin whatever.

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1. The activities of the immunizing mechanism of the body consist, in the main, of the elaboration of *immune-substances*, or *antibodies* (opsonin, antitoxin, agglutinin, lysin, and the like), which may operate independently of, but more often in cooperation with, the phagocytes (polymorphonuclear leukocytes, large lymphocytes, and connective-tissue cells).

2. The opsonic index furnishes a fairly reliable guide in regard to the progress of a given infection and the establishment or non-establishment of an immunity; a high opsonic index, with regard to the specific bacterium (or bacteria, in the case of "mixed infections") responsible for the pathologic process, being, in general, a favorable indication.

On the contrary, a persistently low index indicates that the immunizing mechanism is not being adequately stimulated or that the tissues are unable to respond to such stimuli. It is essential that these stimuli (doses of an appropriate bacterin) shall be administered in correct dosage, both as to size of dose and as to proper intervals; otherwise, the index will be sometimes high, sometimes low, with corresponding fluctuations in the clinical condition of the patient. However, we have also learned how intricate a procedure is the estimation of the opsonic index, which makes its employment by the general practitioner an impossibility; and that the clinical picture is, after all, probably as reliable a guide as the cumbersome opsonic index.

3. At the infected focus or foci, there exists a condition which Wright has termed "lowered bacteriotropic pressure"; by which is meant that there is, at the infected focus, a local deficiency in antibodies. As a specific example, we may say that in a case of typhoid-fever the tissues comprising and surrounding the Peyer's patches in the intestine, the rose-spots and the splenic pulp, may be almost completely devoid of the specific *typho*-agglutinin and *typho*-opsonin, while there may be present in the tissues just named an adequate quantity of *strepto*- and *staphylo*-antibodies.

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The Murphy Drip, or Continuous Proctoclysis

This continuous proctoclysis is a remedial measure of untold value, when once the rationale of its action is properly understood. Some of the solution is absorbed by the blood- and lymph-vessels of the rectum and colon, keeping the blood-vessels well filled, with the result that the absorption of the products of bacterial activity is reduced to a minimum. Next, it stimulates all the organs of excretion and aids them in their efforts to eliminate toxic substances from the body. Another portion of fluid introduced into the bowel passes through the intestinal wall by osmosis and enters the peritoneal cavity, where it dilutes the pus, washing the latter out through the drainage-tubes and rendering less concentrated any pus that may unavoidably be absorbed. Postoperative thirst is also relieved by this proctoclysis.

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measure be abused, the kidneys may break down under the strain of eliminating excessive quantities of fluid.

Dosage of Bacterins

The size of the dose of a bacterin may be too large or too small, and the result, consequently, be disappointing. In my experience, too small doses are employed more often than too large ones. Especially has this been true in the bacterin treatment of whooping-cough, the clinicians who used large doses reporting eminently satisfactory results, while those reporting failures invariably had employed doses too small to be effectual.

In acute conditions, where we have an active infection and virulent microorganisms to deal with, the doses of bacterin should be comparatively small; while in chronic infective processes, where the bacteria have to a certain extent lost their virulence and the tissues have become habituated to the stimuli emanating from the focus of infection, so that the tissues no longer respond to these stimuli by the formation of antibodies in adequate amount, then large doses of bacterin must be administered; and these should be progressively increased until an adequate response is obtained or until it becomes evident that favorable results are not attainable from this line of treatment.

Again, the intervals between doses may not be properly spaced. As we remarked when considering the "negative-phase question," the doses of a bacterin must not be administered so close together that the result is a *cumulative negative phase*. It is an axiom of bacterin-therapy that after administering a dose of a bacterin you must wait until the resulting slight negative phase has passed, and the *positive phase* supervenes, before repeating the dose. The advent of the posi-

tive phase, as has been said before, is shown by an improvement in the clinical symptoms and by a feeling of physical wellbeing apparent even to the patient himself.

In acute conditions, small doses, repeated every other day, or, in urgent cases like pneumonia and septicaemia, every twenty-four hours, until improvement is manifest, should be employed. In chronic infections, the interval between doses should be from three to seven or even ten days, according to results attained.

In infections caused by the tubercle-bacillus, exceedingly small doses of tuberculin or of tubercle-bacterin are to be employed, at intervals of ten days to two weeks, the size of the dose being cautiously increased, but ever remembering that a focal reaction is to be studiously avoided. I have had but limited experience with the treatment of tuberculous troubles by means of bacterin therapy, hence, would refer the reader, for more detailed information on the subject, to the writings of men specializing in this particular field of endeavor.

Finally, the use of a stock bacterin may result in failure to attain the greatly to be desired results, while an autogenous preparation may bring about a brilliant cure. At other times, the autogenous bacterin, for reasons presently to be detailed, may fail ingloriously; while a mixed stock bacterin of polyvalent strain often gives strikingly satisfactory results in the very case in which the autogenous has failed.

This brings us to another of the vexed questions of bacterin-therapy, namely, the comparative virtues, advantages, and disadvantages of autogenous and stock bacterins. Over this question, there has been a long and bitter controversy; but I believe we are finally beginning to see the light.

Puerperal Eclampsia

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

Professor of Obstetrics, Loyola University

THE best way to treat puerperal eclampsia is, not to let it happen. And, the preventive treatment of this condition—so dreadful in its development—is so simple and practical that there is little excuse for any physician having eclampsia occur in his practice. Furthermore, when it does occur, there is little excuse for a fatal termination of the attack.

To many readers, I am sure, these two statements will seem altogether too sweeping. No doubt in some rare cases the convulsions can not be prevented, and also on rare occasions one meets cases in which the toxemia is so great that death is inevitable; still, I have demonstrated in my own practice extending over a period of more than a quarter of a century that the two foregoing assertions

are substantially true. Furthermore, there are hundreds of obstetricians all over this country whose experience but confirms my own. In the past fifteen years, I have had no cases of puerperal eclampsia where I had the opportunity to treat the existing albuminuria for at least one week before delivery.

Within the period mentioned, all the cases of eclampsia occurring in my practice have fallen into two classes; namely: those in which the woman had not been under a doctor's care at all, and those in which I saw her in consultation and she had received the ordinary treatment for albuminuria. Out of all these victims, only one died, and she a woman who was far advanced in Bright's disease before the pregnancy occurred.

The Two Important Remedies

The main factor in my treatment of albuminuria is, the pushing of *digitalis* to the physiological limit; and I may add that for this method of treatment I am indebted to the late Prof. Alfred L. Loomis, of New York. Next, in developed eclampsia, my sheet-anchor is *veratrum viride*; and I owe thanks to Prof. Lapthorn Smith, of Montreal, for having inspired me with the courage to use it in the enormous doses necessary to bring success.

It is fit to emphasize that in the use of both these potent drugs success depends entirely upon their fearless dosage. In comparing notes with those who claim to have been disappointed by this therapy, I have invariably found that they had been too timid to as dosage. That also was my own experience at first, before having learned to use these drugs boldly.

It goes without saying, of course, that when we are giving large doses of such powerful drugs as *digitalis* or *veratrum* we must take certain precautions and exercise a degree of supervision adequate to secure the patient against poisoning. I have seen three cases of such poisoning, one with *digitalis*, and two with *veratrum*, and in each the doctor in charge had failed to appreciate fully the power of the drugs he was using. None of these three cases ended fatally, still, all were sufficiently grave to emphasize the need of caution.

Evidently, it is necessary to adopt some procedure calculated to insure the patient's safety; and such will be found the one outlined below—a course which, if followed, not only is perfectly safe, but the results from which are so brilliant that the practice of

obstetrics is robbed of at least one of its terrors.

The essential feature of this treatment consists in beginning with a dose that is safe for any patient, and thereafter, under very close and scrutinizing observation, to increase the doses, according to the impression produced by the drug. As the effects of *veratrum* are obtained much more quickly than that of *digitalis*, it follows that the details of administration must differ greatly for each drug.

The Prophylaxis of Puerperal Eclampsia

The prevention of puerperal eclampsia depends upon an adequate supervision of the pregnant woman, to the end that albuminuria may be promptly recognized, when present, and promptly and efficiently treated.

Some of the methods employed for this supervision are not always practicable, except for wealthy or at least well-to-do patients. Thus, laboratory analyses of the urine once or twice a week for three months is too costly for most patients, and is quite unnecessary. When the doctor is engaged for the case, he should strongly impress upon the patient the necessity of reporting to him during the last three months of pregnancy *any* states of ill health, especially headache, nervousness, nausea, edema of feet, hands or face, or scanty urine. The patient should also be instructed to send samples of her urine at the beginning of the seventh, the eighth, and the ninth month. If these precautions are faithfully observed, no serious case of nephritis will escape discovery.

How to Examine Urine

Whenever the urine is found to be of very low specific gravity or to contain albumin, then frequent examinations must be made; the frequency varying, according to the severity of the condition, from daily to twice a week. It is not safe to make the intervals longer than half a week if once the kidneys have been involved, as these patients sometimes change for the worse very suddenly.

But these examinations of the urine need not be elaborate analyses, qualitative or quantitative. On the contrary, it is better that they should be simple, so that they can be made by the doctor himself in a few minutes; for then they are more likely to be made *often*.

Three things the doctor must find out—the rest is immaterial. (1) He must know the amount of urine passed in the twenty-four hours; (2) he must know its specific gravity;

and (3) he must know the proportion of albumin present.

The first object can be ascertained by having the patient collect the urine in a vessel from noon to noon. However, the sample used for testing should not be taken from this twenty-four hours' collection, for part of it has stood too long. The specimen should be freshly passed.

The specific gravity is found in a moment by means of a urinometer.

Thirdly, the albumin can be determined most quickly and reliably by the heat-test. This latter statement will be challenged by some of your readers; nevertheless, I am convinced of its correctness. I have used both the heat and the nitric-acid tests for many years, and I prefer to stake my patients' safety on the former.

Much depends, however, upon the manner in which the heat-test is performed. If done in the manner described below, it is as delicate as the acid-test, and it is not subject to the error of redissolving some of the albumin by using too much acid.

The Heat-Test for Albumin in Urine

I use a test tube that has a mark on it 100 millimeters from the bottom. The reason for this will appear below. If the urine is not perfectly clear or if it does not become clear on heating moderately, it should be filtered. As a matter of fact, albuminous urine is nearly always clear. The test tube is filled with urine to the level of the 100-millimeter mark. *Only the upper portion* is then heated to the boiling-point over an alcohol-lamp. In this way, the faintest precipitate can be recognized by contrast with the unboiled lower portion. If no cloudiness is produced by the boiling, the test need not be carried any farther; for, no albumin is present.

If, on the other hand, there is seen ever so faint a precipitate in the boiled portion, it may indicate albumin, but also only phosphates. The addition of a drop or two of dilute acetic acid will dissolve the phosphates and cause the urine to clear up; while, if albumin, it will not. Care should be taken to use only a very small amount of a weak acid for this part of the test, because a strong acid, such as nitric, is liable to redissolve some of the albumin and thus give a deceptive answer when the amount of albumin is small.

If the precipitate has persisted after adding acetic acid, then albumin is present; and then the most important test has still to be made; we must find out how much of it there is.

To determine the percentage of the albumin, all the urine contained in the test tube now is brought to the boiling-point and *kept boiling for at least five minutes*. By passing the test tube (which should be of ample size) rapidly back and forth over the alcohol-flame, explosive boiling may be avoided. This is *the important part* of the test, for, in many samples of urine the precipitate will not settle unless it is well boiled. The tube may now be set in the rack to cool and settle, and, in three or four hours, the albumin will have settled to the bottom, while the supernatant urine will be clear.

By placing a millimeter-scale beside the test tube, it will be easy to read off the number of millimeters of albumin at the bottom of the tube. Supposing the precipitate measures 15 millimeters, it would not be correct, of course, to say that the specimen contains 15 percent of albumin. Nevertheless, the fact that the precipitate fills 15:100 of the tube is just as valuable a means of comparison with future examinations as would be a more elaborate and difficult quantitative examination. Thus, the execution of the test has consumed only about five minutes, and, so, the busy doctor can make a daily test, if need be, without encroaching unduly on his time.

The Relative Importance of the Albumin

Of course, the relation between the quantity of urine secreted, its specific gravity, and the amount of albumin present is of great importance. The safety of the patient depends upon her getting rid of her waste products of metabolism. A low specific gravity, by itself, indicates a lack of elimination; still, if at the same time the amount of urine is large, the total elimination of solids may be sufficient. In most of these cases the urine is of low specific gravity and scanty in amount, thus rendering the danger all the greater. In a very few cases there is but little or no albumin present, yet, I have never seen convulsions occur unless urine was scanty or of low specific gravity, or both.

I have always warned the students of my classes against the danger of attaching too much importance to the presence or absence of albumin, and too little to the quantity and the specific gravity. Irrespective of the amount of albumin, if the volume of urine voided can be maintained at three pints and the specific gravity is not much below 1010, the patient is fairly safe.

Early in my practice, I attended a woman pregnant with her second child, who, two

weeks before delivery, had waterlogged feet and legs and puffy hands and face, complaining of headache and nervousness, and whose urine measured but 1 pint in twenty-four hours and had a specific gravity of 1004, while albumin was absent. She had had eclamptic convulsions in her first pregnancy, despite the excessive catharsis induced with elaterium, calomel, croton-oil, and the like; finally giving birth to a little living skeleton weighing only 2 pounds.

When this woman came under my care, I put her on digitalis and acetate of potassium and maintained mild catharsis; strong emphasis being put on the digitalis. The amount of urine rose to 60 ounces, although the specific gravity would not go above 1006. All her symptoms improved, and she went through her labor safely, with but one slight convulsion. During the following night, her after-pains became very severe, when the

nurse gave her 1-8 grain of morphine hypodermically. For the next five days, she slept heavily day and night; she could be roused, but would fall asleep while eating. During this time, she became more dropsical and albumin appeared in the urine, but she finally recovered perfectly under large doses of digitalis. Why there was no albumin present before delivery is a puzzle that I must leave to those who can settle these problems by theory.

A considerable proportion of the medical profession are in the habit of attaching too much importance to the presence of albumin in the urine, regarding the patient as safe if albumin is absent. The point to be emphasized is, that the quantity of urine excreted and its specific gravity have a much more important bearing on the patient's safety than the mere presence or absence of albumin.

(To be continued.)

Bacillus-Coli Cystitis and Its Successful Treatment

By J. FAVIL BIEHN, M. D., Chicago, Illinois

Director of Clinical and Biologic Laboratories, The Abbott Laboratories

[Continued from page 235, March issue.]

A RECENT case of persistent chronic cystitis that came to my notice, after stock bacterins had been used during a period of four weeks without apparent benefit, proved to be a somewhat rare infection.

A physician who had the case, upon centrifuging the urine and staining by Gram method, found a Gram-negative short bacillus, morphologically identical with the colon-bacillus; the urine, however, was alkaline in reaction. Nevertheless, he considered this to be a colon-bacillus infection and gave stock bacillus coli bacterins; however, with negative results. Upon examining the urine in this case, I found it was slightly alkaline, contained much pus, many phosphates, carbonate of ammonium crystals, and a very minute actively motile bacillus. The fact that the urine was alkaline and the bacillus was highly motile and rather smaller than the colon-bacillus led me to believe that it was not a typical bacillus coli communis; and this proved to be the case, as this organism when isolated in pure culture rapidly liquefied gelatin. It was recognized as proteus vulgaris. A vaccine prepared from this

organism and given in combination with hexamethylenamine and sodium phosphate, after a primary thorough irrigation of the bladder with boric-acid solution, resulted in a clinical cure within fourteen days.

The only other cases of proteus cystitis that I have seen gave a definite history of having followed shortly after catheterization, infection being unquestionably due to this procedure.

A very interesting case of cystitis was one in which the patient suddenly developed, after a night of exposure, a violent cystitis. There was a large amount of pus and blood in the urine, a trace of albumin, but no casts. The temperature was 102° F. and fairly continuous. An autogenous bacterin was prepared from the urine, and examination of the sediment showed practically nothing but colon-bacilli, while the cultures also showed nothing but colon-bacilli. The patient was given ten doses of an autogenous bacterin, with but slight results. The urine became free of colon-bacilli to a great extent, but there was still considerable pus present, and the clinical symptoms, frequent urination particularly, persisted.

This patient was then referred to me, when a careful examination of the urine showed a few pus-corpuscles, a few Gram-negative bacilli—probably bacillus coli—and here and there a Gram-positive diphtheroid. A vaccine prepared from this Gram-negative bacillus and diphtheroid was given to the patient. The vaccine contained 200,000,000 colon-bacilli and 50,000,000 of the pseudo-diphtheria-bacilli. The physician was instructed to give 1-2 Cc. as the initial dose. As he had given the patient 800,000,000 colon-bacilli previously at a single dose, he gave one Cc. of the mixed bacterin; with the result that the patient developed a very sharp reaction, which was unquestionably due to the large initial dose—50,000,000 of pseudo-diphtheria-bacilli. And the patient developed immediately following this first dose of vaccine an acute prostatitis. Upon examining this patient, it was found that the purulent discharge from the prostate gland now contained a practically pure culture of the diphtheroid bacillus. The usual medicinal treatment (hot fomentations, sedatives, finally massage of the prostate gland) resulted in the clearing up of his symptoms within ten days.

Now he was given a second dose of the combined bacterin; only 1-2 Cc., however, was given. This produced only a very slight reaction. The general treatment was continued and a gradually increasing dose of bacterins was given every seventh day. After the fourth dose, all symptoms had disappeared.

This was unquestionably primarily a diphtheroid infection of the prostate gland, the secondary or accompanying bacillus-coli cystitis being the actual cause for which he sought relief. It may have been possible for the bacteriologist in the first instance to find the diphtheroid bacillus, but this is doubtful, owing to the enormous number of colon-bacilli present. As a result of the use of coli vaccines, however, this organism was greatly held in abeyance, with the result that when I saw the patient the diphtheroid bacillus could be easily demonstrated in the smear. Or, it may have been that the diphtheroid bacillus, although found in the original examination, was not considered of etiologic importance and, therefore, omitted in the bacterin.

Why Bacterins Fail

I have seen a score or more of cases of bacillus-coli cystitis in which the usual stock or even autogenous vaccine produced practically no effect. For a long time I was un-

able to understand the reason for failure, especially of an autogenous vaccine, until I came across an article by Doctor Allen in *The British Medical Journal*, in which he described the same experience, and stated further that he had found that some strains of this organism, when heated in the preparation of a bacterin, did not produce an immunizing response, but when killed by the use of 1-2 percent carbolic acid, no heat whatsoever being employed, a favorable result many times could be obtained.

As a result of this information, I have made it a rule to divide my bacterin into two parts; one-half of which I heat, the other half I treat with 1-2 percent carbolic acid or trik-resol; and, since using a vaccine prepared in this manner, I have had very few failures. Doctor Allen prepares his vaccine in three parts, one part of which consists of sensitized, but not killed, bacteria. With this, I have had no experience.

Something About Dosage

While it may be said, as a general rule, that the size of the initial dose should be in inverse proportion to the size of the lesion, that is, in an extensive lesion, a very small dose should be given, whereas in a very small lesion, a large dose should be given. Yet, it is advisable in cases of cystitis due to the bacillus coli communis, or other organism, for that matter, to begin with a small dose, not over 25,000,000, owing to the fact that we cannot be sure that the cystitis is not secondary to some hidden or ill-defined lesion of the gastrointestinal tract.

Many times it happens that a large initial dose of a bacillus coli communis bacterin will result in a severe reaction and a physician will notice for the first time, and often the patient, too, the presence of a lesion referable to some portion of the body other than the bladder. Such cases I have seen numerous times. Very frequently, there will be acute symptoms referable to the gall-bladder, the appendix, some portion of the colon, the rectum, the kidney, and in women the pelvic organs. Unless the physician understands that these are probably chronic infections by the bacillus coli communis, in which the patient had through long association or through lack of severe symptoms not complained previously, he may imagine a complication has arisen. This, however, is simply the manifestation of a local reaction to the bacterin.

A very peculiar case which I saw not long ago was one in which the patient had a condition of general ill health, for which he had

been treated by a number of physicians during a period of three or four years, with little or no benefit. An examination for life insurance, when he applied for a large policy, resulted in his being refused, the reason given being that he suffered from a bacteriuria. His physician had an autogenous bacterin prepared and gave him an initial dose of 250,000,000 colon-bacilli, the result of which was a severe reaction and the onset within eight hours of symptoms of a violent acute coli-cystitis, for which he would have been operated upon if he had taken the advice of his consultants, but, having a dread of surgical operations, as a result of three deaths in his family on the operating-table, he refused. The symptoms, however, very rapidly cleared up and, as a result of fifteen additional injections of his autogenous bacterin, he has improved wonderfully in health, put on weight, and has since been accepted by the insurance company.

In definitely localized inflammations due to the bacillus coli, the initial dose should not be more than 25,000,000. If this does not produce a marked reaction, it may be repeated daily for four or five injections or the dose may be doubled every few days—say, four or five—if a severe reaction is not produced. The usual maximum dose is 1,000,000,000.

Securing Samples of Urine

In securing a sample of urine for the preparation of an autogenous vaccine, I have obtained the best results from a sample collected at or near the noon hour; especially is this true if the patient is up and about.

It is not absolutely necessary, at least in males, to obtain a catheterized specimen, although in females this is highly essential, in order to avoid the always present vaginal infection. Ordinarily in the male it suffices for the patient to have a wide-mouthed sterile container—I prefer a 100-Cc. cotton topped Soxhlet's extraction-flask, that has been carefully sterilized. The patient removes the stopper, holding the mouth of the

flask before him, and after allowing an ounce or two of the urine to pass, thereby washing out the urethra, the flask is held in the stream and one or two ounces is collected, the cotton stopper being immediately replaced.

While it is possible by thorough cleansing of the external parts to obtain a fair sample in the same manner from the female, yet, it is always advisable, if possible, to use a catheter.

The urine should be centrifuged and a careful examination made, using Gram's staining-method. If streptococci, diplococci, diphtheroids or other bacteria are found in addition to colon-bacilli, some of the material should be plated out on blood agar plates; in fact, I have so frequently found streptococci by this method, even when none could be demonstrated microscopically, that I now use it as a routine procedure.

Care Necessary in Chronic Cases

In acute infections, the etiologic agent usually is the predominating one, but in chronic infections the secondary organisms that practically always are contained in the discharge may be present in several hundred-fold greater numbers than the true infectious agent. And, as these secondary infection organisms, especially if they be staphylococci, colon bacilli, proteus, and the like, rapidly overgrow pneumococci, streptococci, and such, the greatest care must be exercised in preparing a vaccine for such chronic cases.

Cases of bacillus-coli cystitis, pure and simple, without surgical complications, as an enlarged prostate gland, polyps or other tumors, stone, and so on, in the vast majority of cases, if not all, are definitely curable by the use of a proper stock or autogenous vaccine, combined with general medicinal treatment. The average case, even though decidedly chronic, and of long standing, can be cured by the addition of proper bacterins to the usual routine medicinal treatment and I believe in from one-third to one-half the time otherwise required.

ASPIRATION

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Measles: How to Treat It Successfully*

By GEORGE H. CANDLER, M. D., Chicago, Illinois

MEASLES (rubeola, morbilli) is without question the most common of all the eruptive fevers, few children escaping the disease. It is, from the first, extremely contagious, and while not often dangerous in itself, frequently prepared the way for the more serious disorders. Otitis is especially to be guarded against, and laryngitis and bronchopneumonia frequently complicate matters. The absolute necessity for constant and minute attention to the toilet of the nose, mouth and throat will be apparent.

A microorganism, not yet identified, is supposed to be the primal cause of the disease; the infection is air-borne, children frequently contracting the disease from occupying the same room at school or even passing the house of an infected individual. The germ has not the resistant power possessed by the microorganism of scarlatina, free exposure of clothing to air and sunlight seemingly effecting its destruction; it is always wise, however, thoroughly to disinfect, after a case of measles, all clothing and the premises probably infected. In very rare cases the disease has been conveyed by a third person—the parent, doctor or nurse—but as a rule direct contact is necessary. The prodromal symptoms are often slight and the patient developing measles—infectious even at this early stage—plays with other children or attends school till the appearance of the rash attracts attention.

The fact that very young children, nursing infants especially, do not readily contract measles is proven beyond question, yet the exceptions are many, the writer having seen an entire family, from grandmother to nursing infant, contract measles from a 10-year-old girl.

Incubation and Symptoms

The incubative period is from ten to fourteen days, the disease usually appearing within ten days after exposure.

The first symptoms are usually a marked coryza with some headache and sore throat; the cough is often troublesome, being frequent and violent, occasionally provoking vomiting. Upon examination the tonsils and fauces will be found congested and, if a careful survey of the hard palate and buccal mucosa is made, small red spots may be noted upon the roof of the mouth, while minute, bluish-white

macules (Koplik's spots) appear upon the mucous lining of the cheeks. These often become more apparent if the mouth is kept open for a minute and slight tension is made upon the cheek by pressure with the finger tip, hooked within the corner of the mouth.

The child may complain of backache, lack of appetite and smarting of the eyes; in many cases the light proves disagreeable and the little patient seeks the dark corners. Listlessness is general in younger children. There may or may not be some elevation of temperature, though I have frequently noted a rise of half a degree the day before the spots were discoverable upon the buccal mucosa. It might be observed here that it is always well to examine suspected cases twice daily, and with artificial light as the macules of Koplik (which are usually to be seen opposite the molars) are not always easily seen, although they are present in nearly every well-marked case of measles. Their value in making an early and positive diagnosis cannot be overestimated since they appear in none of the other eruptive fevers.

Once the rash appears upon the face (usually three to four days later) they fade entirely away. This should be remembered, as physicians have given a negative diagnosis because Koplik's spots were not to be found, though the typical eruption of measles existed on the body. Quite frequently the doctor does not see the patient till the rash has developed and fever is marked, but in every case of coryza with cough and malaise we should examine the mouth carefully.

The rash appears first upon the face—usually about the ears, mouth and nose—and may be looked for on the third or fourth day after the coryza has set in. In some cases the eruption is thickest about the hair on the neck and resembles nothing so much as a number of flea-bites. Hour by hour the eruption spreads until the entire face is patched with small, dark-red macules. In places the skin is unaffected, in others the spots coalesce. Some swelling may occur, the eyes especially becoming puffed, and crusts may form about the nasal openings. In severe cases the features become unrecognizable. Within two days the rash is fully "out" and may become papular. As a rule, about the second day the eruption spreads to the chest, back and arms and, last of all, the trunk and extremities suffer. It is not

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uncommon to see cases without any eruption below the knees, but it is a rule for the rash to fade from the face about the time that spots appear upon the lower limbs.

Desquamation begins immediately after the eruption disappears, beginning naturally upon the face and following downwards. The skin is shed in fine bran-like particles and the child becomes less dangerous as the desquamation proceeds. In three weeks from the time of attack the danger of contagion is, as a rule, over. In mild cases desquamation is slight; here the eruption has been marked and there has been considerable fever. The process lasts from eight days to two weeks—the latter period being a safe limit.

The temperature usually is at its highest during the appearance of the rash; it reaches this point, in typical cases, about the second day—when the face is covered with macules; 104° to 105° F. is not uncommon, though under modern treatment, instituted early, it rarely exceeds 102° F. At this period discomfort is likely to be extreme; the skin itches and burns, the eyes and nose run profusely, the tongue is coated and the cough frequent and severe. The conjunctivæ are injected and muco-pus may exude and fasten the eyelids together. This never occurs if proper treatment is instituted.

The tongue of measles somewhat resembles that of scarlet-fever but the papillæ are not as prominent and the edges have not the characteristic redness. In cases seen at this time constipation is the rule; but diarrhea may be present and this symptom calls for prompt remedial measures—enterocolitis being always possible. There is more or less difficulty in deglutition, the tonsils and fauces being swollen. The glands (submaxillary and postcervical) may be swollen, indeed usually are. Under proper treatment the rash declines about the third or fourth day, and as it fades, the fever falls, the cough lessens and the patient feels better generally. By the time desquamation has well set in, the trouble in uncomplicated cases is to keep the patient in bed.

Atypical Cases

Occasionally the attack is sudden, high fever coming on within a few hours and the child showing every sign of profound toxemia. Here the rash may appear almost with the fever and in less than a day cover the entire body. In exceptional cases it may be hemorrhagic—"black measles." It is a question whether, after all, this is not a mixed infection: I have noticed that such cases

convey a similar contagion in nearly every instance. In such patients the temperature runs high and exhaustion soon follows. While not necessarily fatal, the prognosis is bad.

In some severe cases the rash is very scanty and appears late, but every other symptom is accentuated. Again, the spots may be few and faint, scarcely invading the body at all; the fever is moderate and the child scarcely complains. If allowed to run loose, however, severe symptoms may develop. A patient who has measles should be kept in bed till the disease has run its course. In rare instances the rash disappears, severe prostration ensues, and later the eruption redevelops with increased severity. Mild cases are not always easily differentiated from rubella, but the typical smell of the measles-patient will never be mistaken.

Prognosis and Differential Diagnosis

In ordinary cases excellent; in cases complicated by bronchopneumonia or enterocolitis, guarded. The necessity for careful attention to pharynx, eyes and ears must be impressed upon the nurse.

Rubella is so closely allied to measles that it is frequently confounded with the latter disease. Koplik's spots (the bluish-white macules upon the buccal mucosa) are, however, never present in rubella. The fever is slight, coryza hardly noticeable—if present at all—and the rash is usually the first thing to attract attention. However, there may be some malaise, vomiting or headache. Occasionally severe systemic disturbances occur. The disease is contagious, having an incubative period of two or three weeks. Measles and scarlet-fever do not protect against rubella and the whole trio may occur in the one person within a year. The rash tells the story. Appearing first (as a rule) upon the face, it covers within a few hours the chest and body; the spots generally are pale red in color and often pinhead in size, sometimes even resembling those of scarlet-fever. Discrete maculopapules may however be found about the wrist or forehead in nearly all cases. The whole eruption may fade in one day or last two, and the fever rarely exceeds 101° F. Glandular swelling is common but also transient, and desquamation is often absent, though it is best to have the patient take a series of antiseptic baths. The disease is of little importance and the main thing is to treat symptoms—clean out and keep clean the mouth, nose, intestine and

or by absorption from the skin or the mucous or serous membrane.

There are many factors which influence the action of poison, such as the mode of its administration, the form of the poison, dose, combination, condition of the stomach, quantity and quality of food in the stomach, general health, habit, idiosyncrasy, and, finally, age and sex.

The action is more rapid when the substance is introduced under the skin or directly into the circulation. Absorption is more rapid from serous than from mucous membranes, while absorption through the skin takes a long time. Inhalation of gas gives rise to symptoms very quickly, on account of the rapidity with which diffusion takes place.

The form of the poison influences the action to a considerable degree, watery solutions, when taken into the stomach, being absorbed faster than when in substance, while oily solutions are absorbed more slowly than the aqueous.

The size of the dose is material, an excessive dose often acting as its own emetic, as for instance the sulphates of copper and zinc, even calomel, if given in a large-enough dose, being rejected at once.

When morphine is associated with its synergist chloral, an increased action may be expected; but when taken together with its antagonist, atropine, the poisonous effect of each will be lessened or delayed. Thus, then, the combination in which a drug is taken modifies its action.

The condition of the stomach at the time is important, a healthy, active organ absorbing much more rapidly. Irritant poisons are much more fatal when a person has an inflamed or congested stomach. The period of digestion will influence the result markedly, for, should the stomach contents be strongly acid, an amount of alkali could be swallowed that would otherwise prove fatal. Occasionally the stomach contents are alkaline enough to precipitate alkaloids, and these, in turn, may be redissolved when the stomach becomes acid again.

The condition of health will readily aid or nullify poisonous action, a healthy system showing great vital resistance, while a body weakened by exhaustion or illness would more readily succumb. The presence of paralysis will allow of large amounts of strychnine being taken without harm; so will the presence of pain cause toleration of large amounts of opium. Any impairment of the eliminative organs will cause retention of the poison in

the system and thus hasten the appearance of symptoms of poisoning.

While by their habitual use one may become habituated (not, however, without harm) to certain organic poisons, as, for instance, tobacco, cocaine, morphine, alcohol, the same is not true of mineral poisons; although history does tell us that the old French kings were fed on gradually increasing doses of arsenic, with the idea of immunizing them against the attempts of their enemies, arsenic being the popular poison at that time.

The idiosyncrasy of certain individuals against particular drugs must not be forgotten, and, while one is not able to tell by inspection whether serious effects will be produced or not, yet, the subsequent appearance of toxic symptoms should cause the physician to suspect that the drug and the patient are incompatible. The questions on the history-sheet of a certain great physician always included: "Do you know of any medicine that you cannot take or which makes you sick?"

If the person is physically exhausted, either from disease or hard work, greater effect is noted as the result of administering ordinary doses, and, in the case of depressing poisons, the effect is much increased.

It is a well-known fact that the extremes of life are more profoundly affected by opium, while at those ages mercurials can be given in larger amounts than to persons of middle adult life. Women are asserted to be more easily affected than men.

The system disposes of poison in various ways, principally by elimination, as, direct emesis or profuse diarrhea, or by way of the kidneys, skin or salivary glands; by deposition in the tissues, as in the case of lead; by oxidation, as, phosphorus being oxidized to its acid; and, finally, by phagocytosis, the white blood-corpuscles acting in such a way as to destroy the poison or at least render it less harmful.

The cumulative effects of drugs must be borne in mind, that is, where the drug is excreted so much slower than it is ingested that accumulation results and produces poisonous effects.

The selective action of opium for the brain, of belladonna for the eye, of digitalis for the heart, and of strychnine for the spinal cord need only to be spoken of to be remembered; and this knowledge will be useful in making a differential diagnosis of poisoning by any of these drugs.

Most poisons act by exerting a general de-vitalizing influence; some, however, as, the

mineral acids and alkalis, exert their effects by a local corrosive or burning action, while others affect only some one vital organ or structure.

Poisons may be acute or chronic in their action, which terms are self-explanatory; certain drugs, as, morphine and phosphorus, have an effect which is spoken of as immediate and remote, respectively.

In taking up the symptoms of poisoning, it must be remembered that an early diagnosis is imperative, and, also, that reliance cannot be placed on any symptom, but that guidance and enlightenment must be obtained rather by the sum total of all the evidence or symptoms presented.

We will now take up the several poisons:

Opium or Its Preparations

The symptoms are so well known as to need but passing mention; the most important being the stupor, from which it is difficult or even impossible to arouse the patient, stertorous breathing and "pin-point" pupils, irresponsive to light. The face is cool and clammy, all the secretions but that of sweat being diminished by the drug; the urine is concentrated and often retained. Death is usually due to paralysis of respiration.

Treatment.—Acute poisoning is antidoted by the use of atropine or picrotoxin, given hypodermically. Inasmuch as opium and its preparations are both excreted and absorbed by the stomach, the washing out of this organ frequently with a 1-percent potassium-permanganate solution is strongly advised, care being taken to leave some of the solution in the stomach, as it chemically antidotes opium by oxidation. Strong black coffee also helps. "Flicking" the chest with a cold water towel and walking the patient around are aids, being careful not to produce exhaustion by the latter method. Artificial respiration may have to be resorted to; and, to start breathing in a patient, there is no better method than dilatation of the sphincter ani with the thumbs, keeping up the rhythmic motion of respiration afterward by the usual method. Be sure to catheterize the bladder.

Emergency Treatment.—To wash out the stomach, use dishwater or soapy water, the grease in the former coating the lining of that organ and limiting further absorption, the alkali of the soap antidoting the action of the alkaloids of opium. For a stimulant, ammonia can be used, this being an article commonly found in every home and one of the best and quickest diffusible stimulants there is. The aqua ammoniæ can be used hypo-

dermically also. The coffee is easily obtained, and there will be no difficulty in carrying on artificial respiration nor in walking the patient around, if thought advisable.

Chronic poisoning.—Since the passage of the Harrison antinarcotic law, this subject has become of more than passing interest to the general practitioner, and it will doubtless be of interest to detail briefly a treatment which can be carried out at home; remembering that the family practitioner has the entire confidence of his patient, a fact which largely influences the result.

The patient is to be thoroughly prepared by a course of catharsis, using about twice to four times the amount of cathartics which would ordinarily be administered, inasmuch as the bowel of the opium-habitué is partly paralyzed. From four to six free bowel movements a day should be obtained for a period of at least three days, giving the usual amount of the opium daily, and insisting on exercise, as also on a generous supply of nourishing food. It is well at this time to give the opium hypodermically, whether this has been the customary method of taking or not; for, by this method an accurate idea of the daily amount can be obtained.

Now start the administration of hypodermics of hyoscine and atropine, 1-400 and 1-300 of a grain respectively; giving enough to keep the patient comfortable and free from nervous worry, but not enough to produce more than a very mild delirium. This should be accomplished by the use of two or three hypodermics (as per above dose), given close together until the effect is manifest, then keeping the patient under this influence by repeating about once in three or four hours.

At the end of two days, nourishment and brisk catharsis being in the meantime kept up, the patient may be allowed to come out from under the influence enough to answer the inquiry as to whether he wants any more opium—the answer being usually in the negative. The treatment then can be stopped and the patient allowed to regain consciousness completely. The after-treatment is important.

Strychnine

Within twenty minutes after a poisonous dose of strychnine has been taken, there will be a sense of nervous uneasiness and suffocation associated with twitching of the muscles of the arms and legs, then *suddenly* there occurs a violent tonic contraction of all the muscles of the body, the stronger muscles determining the position into which the pa-

tient is thrown; this usually being the muscles of the back (opisthotonos). This convulsion will last for, possibly, five minutes, when the muscles as suddenly relax and the patient feels a sense of relief. This remission is characteristic of strychnine, and it may last from twenty minutes to half an hour, when there is a sudden and violent return of the convulsion. The remissions become shorter and the convulsions closer together, until at last death occurs from fixation of the muscles of respiration or from exhaustion.

This poison resembles tetanus in its action so closely that an accurate differentiation is important, the absence or presence of a wound being the first point sought; secondly, the convulsion of tetanus has no interval of relaxation or remission; thirdly, the mind in strychnine poisoning is clear until the last, while in tetanus it is clouded.

Treatment.—Empty the stomach immediately, remembering that it may be difficult or even impossible to use the stomach-tube, inasmuch as it may provoke convulsions. Give emetics, preferably. Also catheterize the bladder at once, to prevent reabsorption of the poison. Chloral hydrate is the physiological antidote and should be given in full doses. If the case is seen early enough for using the stomach-tube, wash out the stomach thoroughly with a 1-percent potassium-permanganate solution. Artificial respiration with oxygen has been very successfully employed in the treatment of this poisoning.

Emergency Treatment.—Strong tea, boiled for some time, for its tannin; chloroform, which the physician will usually have in his case, used to control the convulsions; and dishwater for an emetic.

Phosphorus

Cases of poisoning from this drug are often met with from the effects of ingesting the heads of matches, usually in children. It is one of the insidious deadly poisons that may give the physician the impression that the conditions have been relieved, and the pa-

tient may show signs of much relief, apparently having completely recovered from the effects of the drug. Then, in four or five hours or maybe not until two or three days, there will be manifested the remote effects of the drug, and death may result.

The immediate symptoms are vomiting, the vomited matter having a "garlicky" odor, intense thirst and hiccough. The patient is much depressed. The abdomen is distended and tympanitic. Then, as a result of the treatment, the immediate symptoms may all disappear and the patient recover, only to be taken with the remote symptoms after a varying interval of time, as stated. These are: severe icterus, hemorrhage from the nose, stomach, and bowels and purpuric spots under the skin and mucous membranes. Great weakness follows, the liver enlarges, the urine is scanty and albuminous, while death is preceded by coma or convulsions.

Treatment.—The treatment must, necessarily, be very thorough, inasmuch as the prevention of the remote symptoms depends on the complete removal of *all* the phosphorus from the stomach at the time of the first call. Oxidize the phosphorus into phosphoric acid by washing out the stomach repeatedly with the 1-percent potassium-permanganate solution. Avoid the use of oils of any kind, as they dissolve the phosphorus and allow of its more rapid absorption. Give intravenous injections of physiologic salt solution, with sodium carbonate, to maintain blood alkalinity. Give stimulants to keep up the strength of the heart.

Emergency Treatment.—Give warm dishwater or mustard-water as an emetic, using it freely enough to be sure that the stomach is thoroughly cleaned out. Then give solution of sodium bicarbonate and salt per rectum, repeating until it is sure that considerable amounts have been absorbed. Ammonia water can be used as a stimulant, either hypodermically or by mouth.

(To be continued.)

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

[Continued from page 150, February issue.]

BEFORE the tank was erected, I built the primary feature of my long-cherished dream of tropical comfort and health: a good

house of fine cedar lumber, amply ventilated with screens of wire cloth, doors, and windows, and a liberal open space around the top of the walls, just under the ceiling level, and

ceiled overhead with "plaster-board," an American asphalt novelty (not very long in vogue), impervious alike to heat, cold, and dampness, the house being covered with galvanized iron and floored with concrete.

The foregoing half-dozen paragraphs should constitute a finger-board to a "Eureka" for the denizens of hot, sickly countries, where pestiferous insects abound. Naturally, wherever the frosty breath of winter penetrates, shutters over the ventilators would be necessary; but here, where 55 Fahrenheit is low temperature, I have no shutters. I have glass windows, on hinges, inside the wire-cloth screens, which I can open and shut at pleasure; but the upper half of the doors and the upper space under the ceiling have no shutters.

Adding a bountiful fruit- and vegetable-garden, which I usually have (though everything in it was lately eaten up by grasshoppers in one hour), to my house and water-supply, brings well to the front my idea of how to form the foundation and frame-work of a tropical health-structure, vices and other unnatural incongruities not intervening, in which there should be but a very small modicum of medical participation.

These radical fortifications against the enemies of health and long life were embryonic in my meditation many years ere they had actuating nourishment to develop gestation, my munificent earnings having been twice seriously depleted by robbery, and so much spent on the poor and wretched, that financial ways and means were insufficient without borrowing. But at last the big jobs I did for the American plantations, and some hospitals I established on native plantations during decimating epidemics, afforded me the needful funds, and these were immediately put into requisition to accomplish what is finished.

As I am alone in the world, without an heir, I did not have to pause to scruple about providing capital for a family nor for the ever spectral "rainy day" always haunting the average practitioner. And I built, not elegantly, but practically and substantially, little heedful of the legacy I knew I must leave behind me, when my toes are turned up and my feet put foremost on the final journey to the mournful hill.

Hardships Brought by the Revolution

I was my own chief carpenter and mason, doing work with my own hands that would have cost me \$2000 (Mexican), building the

house and the water-tank with the help of two peon boys, previously ignorant of such work; I having time, because I refused to go on rounds among the plantations, with bands of freebooters roaming about under the euphonest name of revolutionists, and having no special relish in being a victim held for ransom by such gentry. This put the people to the inconvenience of bringing their seriously ill here for treatment, every other doctor of the neighboring towns having, for a long time, sought refuge in cities where there were ample garrisons. And the same conditions continue, there being a federal garrison within 200 yards of where I am writing (in July, 1915), and bands of bandits anywhere from ten to thirty miles away. And such has been the status since the beginning of the Madero revolution, with slight and but temporary modifications—now considerably more than three years.

My Practice Now Restricted

This is why I have time to write these pages: I do not respond to any call more than a league [2-3 mile] away, and do not pass a night out of my house. And I see no hope of early relief from this unpleasant crisis, even should peace nominally be established by pending negotiations, as the lawless bands operating are not supposed to be obedient to any of the more prominent leaders farther north. The large, well-organized bodies of this district abandoned the struggle some time ago, under amnesty, but the small, more dangerous parties, who recognize no friends worth pillaging, continued.

The reason why it behooves me to keep out of their reach is, that I am reputed and believed to possess wealth; which, though, I never had, and could not amass in a hundred years of prosperous practice, the public estimating the apparent earnings, being ignorant of the stillborn work and leakage of tangible resources, as I never take anybody into my confidence on such delicate points.

I suppose it would be a novelty to you elegant practitioners to see a member of the profession grasping saw, plane, hammer, trowel, and day after day work ten hours under this burning sun for a year and a half, till the work was completed. I had to thank my boyhood experience for lessons that rendered me capable for the task.

[To be continued.]

What Others are Doing

TRAINING IN DIAGNOSIS

The Massachusetts General Hospital has undertaken a plan for postgraduate instruction by mail, which we wish to commend to every reader of *CLINICAL MEDICINE*, with the urgent advice that he take the course. As Dr. Richard C. Cabot pointed out some two or three years ago, clinical diagnosis, even in our very best hospitals, has been found to be exceedingly inaccurate. Indeed, when this matter was carefully investigated at the Massachusetts General Hospital, it was found that the autopsies revealed conditions which were not recognized at all in more than half the cases prior to death. How much larger must be the percentage of error in private practice!

Realizing the deplorable errors made in diagnosis, the Massachusetts General Hospital has devised a plan for the instruction of practitioners in diagnosis. The Hospital has arranged to send out carefully prepared clinical records of actual cases coming to autopsy. Four of these printed records will be sent to any physician every week for a fee of \$5.00 a year.

These records are edited by Drs. Richard C. Cabot and Hugh Cabot. Each record will give a complete clinical history of some case, with a discussion by some eminent practitioner, such as Dr. Richard C. Cabot himself. These reports will be supplemented by reports on the autopsies, thereby establishing the accuracy or inaccuracy of each clinical diagnosis. Any physician who will follow this course for a year and make a careful study of every one of the cases will wonderfully increase his diagnostic acumen.

We understand that in a number of localities these printed cases are being used at the meetings of medical societies as a basis for diagnostic and therapeutic discussion, thereby making unnecessary the preparation and reading of set papers. Such study and discussion will intensify interest in society work and prove of the utmost value to their members.

We sincerely hope that at least a thousand of the readers of this journal will write at once to Dr. Frederick A. Washburn, resident

physician, Massachusetts General Hospital, Boston, Massachusetts, who has charge of this work, and enroll themselves in this course.

NUCLEIN TREATMENT OF DEMENTIA PRÆCOX

We are sure that every reader of this journal will recall the interesting papers contributed last year by Bayard Holmes, in which he introduced to American physicians the method of treating dementia præcox developed by Donath in Germany and Lundvall in Sweden. A report of his experience with this method has been made by Charles F. Read, assistant superintendent of the Illinois State Hospital at Peoria (*Med. Rec.*, Jan. 15, p. 104).

In treating his patients, Doctor Read used a 10-percent solution of sodium nucleinate, prepared according to the formula of Donath, with the addition of a small amount of sodium cinnamate. Injections were made into the abdomen with a large glass syringe. While these are painful, the treatment is not severe and the solution is absorbed rapidly. No abscesses formed and practically no induration followed after the approximately 150 injections given in this series.

Doctor Read gives the details of 10 cases of dementia præcox treated with the nuclein by this method. Without following him closely, it may be stated that in one case, "after eight treatments, the patient became quite normal in conduct and talked freely, but had no insight." In another case, the patient improved during the treatment, and "became less seclusive, seemed more cheerful, and worked at fancy work. She was paroled, after some months, very markedly improved, but still odd in her behavior and without insight." In the third case, 10 injections produced no alteration of the white-cell blood count, no rise of temperature and no improvement. The next patient "did not improve until several months after cessation of treatment, when she cleared up rapidly and went out, apparently well, but without much insight." The fifth patient was paroled,

in excellent mental condition, three months after treatment was begun. Still another of the patients improved remarkably in conduct following the first treatment, but relapsed somewhat; then again improved following the second treatment. On the whole, however, this patient continued to do much better and finally escaped. (If we may perpetrate a pun, the treatment evidently "helped him out.") The next patient apparently received no material benefit from the treatment. A colored girl received 8 treatments extending over two months, following which she improved rapidly, and was finally paroled in what was, apparently, a normal condition. Case 9, which is described at considerable length, was interesting, in view of the marked improvement following immediately upon the injection of sodium nucleinate in a patient who had formerly been in a stationary condition. In the tenth, and last, case reported, the patient received 7 treatments, the number of white blood-cells ranging between 6800 and 14,000. By the time the last treatment was given, the patient showed a change for the better, smiled, talked, and complained about being with untidy patients. When placed in another ward, he improved rapidly.

Doctor Read does not attempt to generalize from the results obtained in these ten cases. However, he declares that in certain cases it seemed to precipitate an improvement, which, however, might have occurred later on without treatment. He advises its continuance until definite statistical results are obtainable.

RATS IN THE TRENCHES

That shrapnel, high explosives, Germans (or English—put in the word that suits you), and lice are not the only unwelcome visitors to the trenches, is shown by a communication to the *Paris Médical* (Jan. 22), contributed by Loir and Legangneux, who incorporate in their article a letter received from one Louis Morin, formerly the official rat-catcher of the bureau of hygiene of the city of Havre. These rats, it seems, are submitted to laboratory examination, in order to determine the presence of the plague-bacillus, which, fortunately, has never been found in that city.

Morin, at the beginning of the war, went to the front with his regiment, and now he sends back to his old colleagues in Havre a picture of himself, his clothing decorated with dead rats, which he calls "*un souvenir du front ou je suis toujours à la chasse*" (greetings from the front, where I am always on the

chase). "In 105 days," he writes, "I have killed 5437 rats." He adds that in the valleys of the Aisne and the Marne there are more rats than there are in Havre.

The authors remark (probably in defense of their city!) that, thanks to the food warehouses in Havre, rats are becoming more and more abundant, making it necessary to keep after them every day. For their destruction in large establishments, they employ the virus of the Pasteur Institute, which is placed in the runways of the rats. When it is desired to clean up a few rooms, as is most usually the case in the city, they use squills as a rat-poison. Following are the two formulas most employed for this purpose:

1. *Powder of squills and hashed meat.* This consists of equal parts of squills and hashed meat, made into little balls, of 5 Grams each.

2. *A paste of squills*, the formula of which is as follows:

Powdered squills..... 5 Grams

Flour.....20 Grams

Powdered fennel.....20 Grams

Essence of anise..... 1 drop

Ordinary fat, q. s., to make a hard paste.

Make up into cakes of about 10 Grams each.

The rats are attracted by the odor of the anise. This mixture is not dangerous for other domestic animals, but kills the rat very quickly.

TREATMENT OF SEVERE POSTPARTUM HEMORRHAGE

A novel method, which he employs for the immediate control of severe postpartum hemorrhage, is described by R. K. Howat. This writer points out (*Brit. Med. Jour.*, 1915) that two fundamental principles must be considered in these cases, the first one being, to exert pressure, (a) proximal to the bleeding area, and (b) local at the bleeding area; and the second, elevation of the bleeding area. And this is the way he brings it about, the procedure being described in connection with an imaginary case:

"The patient's appearance suggests the condition present. The bedclothes are at once thrown off and the quantity of blood seen practically clinches the diagnosis. With one hand the abdominal aorta is compressed—an easy thing to do through the lax abdominal wall, and one which should not require more than three seconds. Meanwhile the nurse is called to the bedside; and further assistance, if not in the room, is called for. The other hand separates the thighs and is then passed into the vagina.

The cervix is felt and grasped with moderate firmness, in order to steady it and so help the other hand in its next maneuver. As soon as this is done, the abdominal hand, leaving the aorta for the moment, "gathers" the relaxed and blood-filled uterus in its hollow, squeezes it, and presses it down in an ante-flexed position against the vaginal hand, which meanwhile has been shut and moved into the anterior vaginal fornix. The anterior and posterior uterine walls are now pressed against each other by the two hands. At the same time some pressure, if thought desirable, is made on the aorta by the back of the wrist of the abdominal hand.

"While this is being done, an assistant places a pillow between the patient's head and the top of the bed, to act as a buffer. As soon as the uterus is gripped between the attendant's hands, the nurse lifts up the patient's pelvis as high as possible—practically to an angle of 60 or 70 degrees with the bed—that is, the patient is placed in the Trendelenburg position. The necessary counter pressure is given by the resistance of the bed-head to the head of the patient, who now rests on the back of her shoulders, neck, and head. All the above maneuvers need not occupy more than thirty or forty seconds.

"Meanwhile the additional help, which by this time has arrived, prepares whatever is necessary and available to maintain the Trendelenburg position, in order to relieve and set free the nurse. Suitable mechanical supports are pillows and the like, a partly inverted chair, and a towel or sheet as a sling from the bed-top. Others will readily suggest themselves.

"The above measures will, with practical certainty, secure the complete arrest of hemorrhage as soon as they are in operation. No other *local* treatment is attempted. But, if the patient's condition suggests danger from low blood pressure, then her arms and legs are raised to the vertical and held there by the assistants.

"When the uterus is felt to be firmly contracted (and on no account before this is so), the vaginal hand is withdrawn, and is then available for other purposes, a wet pad being applied to the vulva as the hand is withdrawn.

"As soon as uterine contraction and the patient's general condition are satisfactory, the pelvis is lowered to an angle of about 30 degrees and the abdominal hand removed, being returned from time to time, to observe the condition of the uterus. A binder is tightly applied. The patient is kept in this elevated position for as long as seems desira-

ble—never less than several hours—her legs being supported in a horizontal position. Whatever additional measures may be thought desirable for the maintenance of hemostasis and uterine contraction are applied, and suitable arrangements are made for the patient's general comfort."

SODIUM SALICYLATE INTRAVENOUSLY IN ACUTE RHEUMATISM

Some months ago we published formulas for the intravenous administration of sodium salicylate in the treatment of acute rheumatism, to be used either when the drug is not well tolerated when given by the mouth or when it is desired to produce immediate and pronounced effect. Our readers also recall the paper by Mr. Nielsen, published in our August (1915) issue, in which reference was made to the use of "salicylic-acid solution" in the treatment of tuberculosis.

We find another reference to the use of these intravenous injections in the treatment of acute rheumatism in the *Semana Medica* for December 23, 1915, in which Cernadas advises daily injections of from 1 to 2 Grams (15 to 30 grains) of sodium salicylate, the solution employed being as follows:

Sodium salicylate.....	5	parts
Caffeine citrate.....	0.25	part
Distilled water.....	25	parts

Of this solution, from 6 to 10 Cc. (100 to 150 minims) is given daily. The salicylate must be chemically pure, and the solution should be kept in the dark. According to Cernadas, this treatment is of special value when the remedy is not well borne by the stomach.

ALCOHOL IN PNEUMONIA

The following health note is issued by the United States Public Health Service and is printed exactly as received:

"The United States Public Health Service brands strong drink as the most efficient ally of pneumonia. It declares that alcohol is the handmaiden of the disease which produces ten percent of the deaths in the United States. This is no exaggeration. We have known for a long time that indulgence in alcoholic liquors lowers the individual vitality and that the man who drinks is peculiarly susceptible to pneumonia. The United States Public Health Service is a conservative body. It does not engage in alarmist propaganda. In following out the line of its official duties, it has brought forcefully to the general public

a fact which will bear endless repetition. The liberal and continuous user of alcoholic drinks will do well to heed this warning, particularly at this season of the year, when the gruesome death-toll from pneumonia is being doubled."

And so the United States Government is becoming a prohibition propagandist; for, in the last analysis, that is what it amounts to, doesn't it? If alcohol is dangerous to health and provocative of higher mortality in infectious diseases, it is assuredly something to get rid of.

ALCOHOL IN THE FRENCH ARMY

Th antialcohol propaganda in France is growing in intensity. The topic has been discussed at a number of meetings of the French Academy, and, while apparently there are no prohibitionists in Paris, there are many who wish to see the alcohol evil drastically regulated. At the meeting of the Academy of Medicine on January 25, the topic was discussed by Debove, Gautier, Hayem, Linossier, and many others. All those taking part in the discussion were in accord in this conclusion: "As to fermented drinks, they may be consumed, expressly on the double condition of being taken only in moderate quantities (which, for wine, should never exceed a liter), and only when eating."

HEXAMETHYLENAMINE AFTER GALLBLADDER OPERATIONS

In discussing a paper on gallbladder diseases read by Dr. Charles H. Mayo at a medical meeting, and which is reported in *The New York Medical Journal* of March 4, J. Lewis Amster laid emphasis upon the value of hexamethylenamine administered after gallbladder operations. On account of the danger of the production of cholecystitis and, realizing that the mere removal of the stone and drainage does not remove the underlying cause of this condition, he was of the opinion that the post-operative treatment should be considered as important as the operation itself.

Experimental study with hexamethylenamine has convinced Doctor Amster that this drug has specific germicidal action for the gallbladder and intestines and, therefore, acts as a powerful intestinal antiseptic and anti-fermentative. He has made it a routine measure, following these operations, to give his patients a small quantity of this drug, well diluted, and at frequent intervals.

This treatment has proven valuable after abdominal operations. His patients never

required catheterization, thirst was greatly relieved, abdominal distention rarely occurred, shock was lessened; and the only disadvantage is that the drug can not be administered by the mouth when there is persistent vomiting and unconsciousness. In that event, the hexamethylenamine is administered by proctoclysis, according to the same principle as the Murphy drip, but employing an acid medium, on account of the alkaline intestinal secretion.

OBSTINATE NEURALGIA CURED WITH EMETINE

Some really remarkable results were obtained by Alexander C. Howe (*Long Island Med. Jour.*, Feb., p. 57) in four cases of neuralgia of the head, all of which had resisted prior treatment on classical lines. While pyorrhea was not a decided factor in any of these cases, in all of them the entamoeba buccalis was found, so that Doctor Howe decided to give emetine treatment a trial. Following is his description of the first case treated, which, in the main, is typical of all the rest:

"On September 25, 1915, I was consulted by a man, age 43, for pain in one or both cheeks, extending at times to the forehead, at other times to one or both temples. This pain had been more or less constant for five years, but had increased considerably the past year. His teeth were frequently too tender to eat substances like beefsteak. During the preceding three years, he had spent about \$400 among dentists, with the idea that his teeth caused his pain. X-ray after x-ray examinations were negative. His general condition and neuralgia of the face and head were such that he was frequently incapacitated for business. He also gave a history of vasomotor rhinitis and general depression that is characteristic of entamebic protein sensitization.

"Examinations of nose, accessory sinuses, and throat were negative. His gums and teeth were far better than in the average mouths that give no trouble. Only a few pus-pockets were found. The gum margins were not excessively irritated. None of the teeth were loose. From appearances, his pyorrhoea alveolaris was so slight as to be a negative factor in his case.

"Microscopical examination for entameba showed the mouth and tonsils strongly positive, but the nose negative.

"He was injected with emetine September 25, at the time of his first visit. The injection was repeated the following day. On the

27th, he reported that he had been entirely free from pain since the time of the second injection, and that his teeth were so comfortable, he expected to tackle the first beef-steak he had attempted in two years. From that date to the present time, November 1, 1915, he has been entirely free from pain, practically free from soreness, of the teeth, and his symptoms of protein sensitization have cleared up."

We hope that readers of CLINICAL MEDICINE will follow this cue. It does not inevitably follow, of course, that the benefit obtained by the injection of emetine in these cases is due to the fact that the drug is an amebicide. We are beginning to suspect that there are physiologic reactions to this drug which we do not as yet understand. Some day, we hope, we may. At any rate, if it will cure intractable neuralgia even once in a while, it certainly is a good thing to have on hand ready for trial.

SODIUM GYNOCARDATE: A NEW REMEDY FOR LEPROSY

Thanks very largely to the brilliant work performed by Dr. Victor G. Heiser in the Philippine Islands, chaulmoogra-oil is now considered as probably the most valuable remedy we have for leprosy. Unfortunately this oil is extremely nauseating and it may interfere very seriously with digestion. To overcome these objections, Sir Leonard Rogers of Calcutta, whose great work in developing the emetine-therapy of dysentery has been pointed out repeatedly in these pages, has been using in its place gynocardic acid—also known as chaulmoogra acid—which is believed to be the *active principle* [please note!] of that oil. Since gynocardic acid is insoluble in water, he has tried both the sodium and the potassium salt; but the sodium gynocardate, seems, on the whole, to be preferable. Rogers has employed this gynocardate in doses of 1 to 2 grains repeated twice a week; although this dosage may be increased up to 40 grains in a day.

Doctor Rogers states that, while it is too early to say what will be the ultimate result of this treatment, he is gratified by the number of cases of leprosy, both of the anesthetic and the tubercular type, which have improved rapidly under the influence of the hypodermic injection of either of these salts; adding that this remedy has proven more effective than any treatment heretofore tried by him, including nastin subcutaneously and chaulmoogra-oil and gynocardic acid taken by

mouth. (Nastin, we may add, is a glycerin ester of a fatty acid secured from leprosy bacilli. It was introduced by Deycke and Reschad, in 1907, and formerly was considerably used in treating leprosy.)

PROPHYLACTIC VACCINATION AGAINST CHOLERA IN THE WARRING ARMIES

According to the Austrian and German medical journals, anticholera vaccination has proven a "brilliant success" in the armies of the central powers, so that, despite the numerous occasions for infection encountered, it has been possible to prevent the outbreak of an epidemic among any of the divisions, or, where at the beginning such an epidemic had started, to check it abruptly by means of general vaccination.

This accomplishment is being hailed as a triumph of science. One beautiful feature is that the injections are entirely harmless, the men continuing their arduous military duties without interruption. The rate of attack among the unprotected has been about fifty times as great as among those who were vaccinated.

VARICOSE VEINS NOT NECESSARILY DISQUALIFYING

An interesting instance of varicose legs is described (*Muench. Med. Woch.*, 1915, p. 462) by Military-Surgeon Gruener. A man of 28 years, of the "landsturm," who had not served, presented himself for examination, as ordered. He was of strong muscular build and vigorous appearance. However, the veins of both legs were so enormously dilated, that "they could not be imagined to be more so." All over the legs (left one the worst) these blood-vessels lay like cylinders of the "thickness of infants' arms," with smaller ones in between that fused into veritable knots, and these sending out a network of still smaller ropes and veinlets. These swollen ropes felt softish and could be emptied by stroking centripetally. The covering skin felt warm and there was no appearance of discoloration or scarring; neither of any edema. The feet pointed at the proper angle.

Naturally, the man was marked "high-grade unfit" for field service, although useful for light service without weapon. Seeing this marking, the man protested, avowing that a year ago he had won the prize for army-packing, also several athletic prizes. Yielding to his intense insistence to be inscribed for the infantry, the doctor put him

down as "fit, class two". But at this the man became almost furious, swearing that he was good for any kind of infantry duty. The doctor was so impressed, that he finally set him down as A-1. And he is now of the opinion that many a man having varicose veins has been pronounced unfit for labor when he should not have been. He suggests looking into such men's lives.

MECHANISM OF THE URINE SECRETION IN THE KIDNEY

A. Leschke, of the Second Medical Clinic of Berlin, has been conducting some intimate studies on the actual mechanism of the secretion of the urine by the kidneys, and has published his results in the *Zeitschrift fuer Klinische Medizin* (Bd. 81, H. 1 u. 2). His aim was, to learn which particular anatomical elements of the organ are responsible, respectively, for the elimination of the several constituents of the urine—urea, uric acid and other organic compounds, salts, and water—and under what conditions of concentration.

These labors, proving and disproving previous declarations and greatly extending actual knowledge in this highly important (both in a theoretical and practical sense) field, are extremely valuable to the diagnostician, but are of such a nature as not to yield themselves to abstracting. The object here is to call attention to this work.

ECLAMPSIA AND THE PUERPERAL KIDNEY

In a communication to the *Zentralblatt fuer Gynaecologie*, W. Gessner advances the theory that the primary factor in the development of puerperal eclampsia is, the disturbance of the renal functions, while the toxic condition is the direct result of the latter. The injury to the kidneys, in turn, is caused by the heart being affected by a condition of stretching and tension, exerted, during gestation and accouchement, upon the kidneys when they are held fixed from one cause or another.

As a correlative of the conditions assumed, rational treatment consists in immediate emptying of the womb, in order to get rid of the circulatory disturbances affecting the uropoietic system. Furthermore, when such puerperal kidneys are present, one of the kidneys must be freed from all tension and stretching by severing its ureter (the renal stump being implanted into the colon or, when possible, the veriform appendix).

Citing the foregoing proposition, Doctor Traugott, a collaborator on the *Therapeutische Monatshefte* (April, 1915), expresses grave doubts as to the practical value of Gessner's operation in reducing the present mortality of 20 percent, while the probability of infection of the kidney from the colon is very great. Nevertheless, the main consideration is, the suggestion as to the etiology of the eclampsia.

THE NETTLE AS AN ECONOMIC AND REMEDIAL PLANT

At one time, the nettle was highly esteemed in continental Europe for its fiber, which was woven into a special textile that even now in Germany bears its name ("nessel") in the imitation weaves from other sources. With the introduction of new fiber-plants, it became a noxious weed. (As "dirt" is "matter out of place," so a weed is an herb for which we have no use—utilitarian or esthetic.) Now, however, under the present economic pressure weighing upon Germany, this plant seems to bid fair to assume a rank of higher importance than ever. This much, at least, we learn from the popular press of the central empires. An account of all the good things nowadays ascribed to the despised nettle, hitherto associated principally with the donkey and with the idea of discomfort, may not be without interest even to the readers of this journal.

First of all, the young nettle-plant, gathered in the spring and before blossoming-time, is represented as constituting the most important savory part of a farrago of wild-growing spring-greens utilized either in the form of salad or as a cooked vegetable dish, notably in combination with dandelion, sorrel, and acetosella. As a vegetable food, it is said to surpass all others in its content of the nutritive salts, particularly those of the bone-forming kind—a fact worth remembering, since the modern prevalence of dental caries and other constitutional maladies well may be ascribed to the limited consumption of vegetables and fruits rich in this particular. For this reason, German writers now urge the free use of the nettle as a food.

The herb, it is asserted, may be preserved the year 'round by drying on sheets and storing in dry places; and in the latter state it forms a delectable addition to soups, vegetables, dumplings, various meat dishes, and so on.

In handling the weed, it is best to wear gloves or else to use a "rose-clipper"; only the topmost leaves being taken from older,

tall plants. The latter, allowed to grow, will have blossoms and bear the needful seed—the nettle being an annual. The seeds are to be gathered by stripping the branches, the person wearing leather gloves.

Concerning this nettle-seed, it is said that it is the most valuable bird-food known; the seeds, not freed from the dry leaves, being fed to the birds, pigeons, and fowls. The part of the seed laid by may be sown in any place and corner not otherwise utilisable for growing other things, for, the nettles thrive on almost any kind of soil, in any spot; it does best, though, on freshly cleared land—a fact worth remembering. But nothing of this plant need go to waste, for it is rich in protein, and thus (best cut short) constitutes a highly valuable food for horses—unless the fiber (a beautiful strong silken floss) is to be utilized or the plant is added to the stable-manure pile.

Maybe some doctors in the rural districts, especially where women's and children's help can be had cheaply, will find a hint here more profitable than the questionable raising of ginseng and golden-seal. Just think of cartons of bird-seed and of culinary addenda, and such. However, this must be tried out; we merely repeat what we have read.

IS EMETINE A BACTERICIDE?

Since Frazier published his article relative to the abortion of typhoid fever with emetine, a number of investigators have been studying the bactericidal action of this alkaloid. Among these, Beekman, whose paper appears in *The Medical Record* of February 12 (p. 284), arrived at the conclusion that the subcutaneous administration of emetine hydrochloride, in 1-2 grain doses every six hours, does not impart any bactericidal properties to the blood, at least so far as the typhoid-bacillus is concerned.

The result of a very exhaustive and careful study of this question has been published by Kolmer and Smith (the latter professor of pathology in the University of Pennsylvania), who, in two articles contributed to the March number of *The Journal of Infectious Diseases*, discuss their attempt to ascertain, first, whether emetine is bactericidal *in vitro*, and, second, whether it is bactericidal *in vivo*. The amebicidal action also was studied, and the fact demonstrated without difficulty.

However, the action of the alkaloid upon bacteria, was not so easily determined. Still, their studies indicate that emetine certainly does exercise some bactericidal action, and

the authors ascribe some of the beneficial effects following the use of the alkaloid in conjunction with local treatment, in pyorrhea, to the fact that it is mildly bactericidal, although its principal value in the treatment of that condition undoubtedly must be ascribed to its power of destroying the amebæ fundamentally implicated.

We are particularly interested in this study, in view of Frazier's experience with regard to the bacillus typhosus. According to Frazier, emetine certainly does possess antiseptic and germicidal properties, but this fact becomes evident only if the bacteria are exposed to the remedy for a long-enough period. Given a solution of the same strength as phenol, emetine is from one to five times more efficient as a destroyer of microorganisms. However, its germicidal action is exerted much more slowly than that of the phenol, so that, to determine the full effect it is necessary to continue the observation over a period of ten days.

From a practical point of view, however, and considering the total amount of fluid contained in the human body and the exceedingly small percentage of emetine which therapeutically may be caused to circulate in this fluid, the conclusion of Kolmer and Smith is, that when subcutaneously administered the emetine is so slowly bactericidal as to be of little or no clinical value.

As to the treatment of pyorrhœa alveolaris, with emetine, the authors give it as their opinion that it would seem that the logical treatment of this condition should consist primarily in its local application, but in conjunction with hypodermic injections, especially in severe infections or those accompanied by systemic complications.

To recur to the value of emetine in typhoid fever, we must say that, in our opinion, the problem is opened anew by these interesting papers by Kolmer and Smith. Even if the drug is shown to be only slightly bactericidal, the fact that it has the power of inhibiting and restricting development of the typhoid-organism would open up possibilities that cannot be disposed of immediately. We should have more light upon this subject.

HOW A SOLDIER'S WOUND-DRESSING PACKAGE SHOULD BE CONSTITUTED

After giving a description of the packages for emergency wound dressing, as supplied by the belligerent governments to their soldiers in the field, A. Lohmann, of Berlin, in the *Pharmazeutische Zeitung*, enumerates what he

considers the prime demands that should be met by these soldiers' pocket-packages, namely: (1) construction such that they can be opened easily; (2) the outer cover must be durable, impervious, and uninfluenced by sterilizing; (3) when opened, there must be no danger that the compress for covering the wound will come in contact with the hands—the principle of asepsis must appear throughout.

Inasmuch as, in the author's opinion, the emergency-packages supplied by the German war department most nearly comply with these demands, it would seem well for American practitioners to try to familiarize themselves with them, by securing specimens. He pronounces the French and Russian models as unfit, being subject, under any circumstances, to contamination.

ELATERIN-CATHARSIS FOR OBTAINING SPECIMEN-STOOLS OF TYPHOID CARRIERS

In a study of the results of examination of 290 specimens of urine and 298 specimens of feces, Tonney, Caldwell, and Griffin, of the Chicago Department of Health, reported in *The Journal of Infectious Diseases* for March (p. 239), their method of securing specimens of stools from individuals suspected of being typhoid-carriers.

As pointed out, typhoid-bacilli ordinarily are much more numerous in soft or diarrheal stools than they are in formed stools. Therefore, in order to secure specimens for examination, it is desirable to use a cathartic that will bring down the contents of the small intestine, where the organisms are most likely to lodge; the bacillus typhosus seldom being found in the colon.

The cathartic selected was elaterin, for the reason, first, that it is sufficiently powerful to empty the bowels thoroughly, and particularly, to bring down the contents of the small intestine, and, second, because it is devoid of antiseptic properties. The authors first used this cathartic in connection with a restaurant epidemic for which a waitress, who proved to be a typhoid-carrier, was responsible.

In this instance, three successive specimens of feces collected without resort to the elaterin-purge, were negative. Then this cathartic was administered, after which a fourth specimen was found to contain typhoid-bacilli; these being isolated without difficulty. This was the experience in many subsequent instances, and the conclusion arrived at was

that by means of elaterin-catharsis it is possible to secure stools with a maximum probability of carrying the infections.

Another very practical—and almost inevitable—conclusion of the authors is, that a typhoid-carrier is probably most infectious when suffering from diarrhea, and least infectious (perhaps not at all infectious) when not having diarrhea.

BACTERIN-TREATMENT OF CHRONIC SKIN DISEASES

In 70 cases of chronic skin disease, selected because other methods of treatment had proven failures, Dennie and Bufford (*Boston Med. and Surg. Jour.*, Dec. 16, 1915, p. 910) resorted to bacterin-treatment. The subjects were dispensary patients treated at the skin-clinic of the Massachusetts General Hospital and in whom the results thus far obtained seemed unjustifiably poor. Of these 70 cases, 35 were of acne vulgaris, 21 of furunculosis, and 14 of folliculitis.

In the treatment, both autogenous and stock bacterins were tried, in order to determine their relative merits. In order to exclude other influences, all external treatment was suspended while the patients were being vaccinated. The initial dose of the bacterins employed was never less than 100 million organisms. The dosage was gradually increased, however, so that the last injection often contained 2 billions. The total number of doses rarely exceeded ten, and the interval between them was from four to seven days. The administration, however, was governed by the local reaction at the point of injection, such as redness, heat, slight edema, tenderness upon pressure, these symptoms appearing within from four to twelve hours after administration and sometimes persisting as long as forty-eight hours. If this reaction did not occur either at the first or subsequent injections, a new bacterin was prepared and administered, the assumption then being that the right organism had not been selected or that the preparation had been injured in the process of manufacture. As a rule, the general reaction was very slight.

In addition to the bacterin-treatment, attention was given to the simple rules of hygiene, diet, bathing, and the like. Acne-patients were instructed to rub the lather of a nonirritating soap into the affected parts and follow this immediately with cloths wrung out of hot water. After this procedure, the comedones were very easily removed with a suitable instrument. This was

followed by the application of hot and cold cloths used alternately for five minutes. Pus was expressed when present.

The authors give at some length tables illustrating the results obtained in these different classes of cases. The examination of these tables shows the following facts.

Of all the cases treated with bacterins, 64 percent were apparently cured, 20 percent were benefited, and 16 percent received no benefit whatever.

The autogenous bacterins gave better results than did the stock bacterins, except in the treatment of furunculosis, in which no difference could be observed.

In acne, the best results were obtained in the indurated type. The comedo type responded less favorably, and the furuncular type least favorably of all.

The most favorable interval between doses was found to be five days in acne, four days in furunculosis, and seven days in sycosis.

Pure cultures of the staphylococcus albus were found in all of the cases of indurated and comedo acne, and in 7 of the 14 cases of folliculitis. Mixed cultures of the staphylococcus albus and aureus were found in 6 of the 7 cases of furuncular acne, in 3 of the 21 cases of furunculosis, and in 2 of the 7 cases of folliculitis. Pure cultures of staphylococcus aureus were found in 18 of the 21 cases of furunculosis.

The writers give it as their opinion that in furunculosis and in the cases of folliculitis in which treatment was successful, the bacterins were probably directly responsible for the results obtained, but this assertion cannot be proven to be true in the case of acne.

BACTERIN-TREATMENT OF ASTHMA AND BRONCHITIS

Robert H. Babcock writes that during the year prior to his report he employed vaccines prepared from sputum in 6 cases of bronchial asthma. Although a cure has not been obtained in every instance, the results, he declares (*Lancet-Clinic*, Feb. 12, p. 139), encourage him to believe that autogenous vaccines exercise a distinct and curative influence over the bronchitis which so often follows and perpetuates the asthma.

In one case, already reported in *The Journal of the American Medical Association*, a complete cure was obtained; 3 others of these victims were free from their asthmatic attacks for a time, although 2 of these have had a relapse. In only 1 of the 6 cases no benefit was obtained.

It is of interest to learn that, with but one exception, the vaccines proved effective only when they contained an anaerobic fusiform bacillus, this being generally associated with the diplococcus mucosus and the micrococcus catarrhalis.

Doctor Babcock also reports a number of very interesting cases of bronchitis, generally occurring in patients suffering from chronic cardiac or other disease, in which benefit was secured from vaccination. One patient was a woman of sixty, with a blood pressure of 200, who contracted a severe cough which refused to yield to ordinary treatment. Her sputum was found to contain an almost pure culture of the bacillus mucosus, and upon a vaccine from that organism being injected, improvement occurred from the beginning, and a complete cure finally resulted. Several other cases were reported, in which benefit followed exactly the same line of treatment.

Doctor Babcock found that in bronchitis independent of asthma the organisms present in the expectorate mainly were the bacillus mucosus, the diplococcus mucosus, micrococcus catarrhalis, and a bacillus like that of influenza.

OPTOCHIN IN PNEUMONIA

The use of optochin in pneumonia, which has been touched upon once or twice in these columns, seems to gain ground in Germany and Austria-Hungary, judging from the multiplying reports from clinicians of those countries; and from among these we select the following experience told by F. Rosenthal (of an infectious-diseases hospital at Breslau) in the *Therapie der Gegenwart* (1915, p. 181)—emphasis always being laid by every reporter that the course with this drug must be started early in the attack. To be brief:

In two cases of croupous pneumonia, critical defibrilization set in as early as on the second day after beginning with the optochin, while all other symptoms were abating concurrently. In another patient, who was put upon this optochin-therapy, the fever and symptoms let up within thirty-six hours after his receiving the remedy. In still another, under similar conditions, the defibrilization occurred in lysis, but much sooner than ordinarily could be expected. However, one patient died on the sixth day; but, then, his condition was unusually grave from the very first.

The dosage was as follows: 8 grains of optochin three times a day or 4 grains every four hours, until a total amount of 72 grains

had been administered. The author did not combine this treatment with camphor, in any of these cases, for he thinks he has observed the latter to interfere with the chemotherapeutic action of the main remedy.

HEMORRHAGE IN A "BLEEDER" RELIEVED BY INTRAVENOUS INJECTIONS OF EMETINE

The following case is described by J. Frank Points in *The New Orleans Medical and Surgical Journal* for February (p. 520): The patient was a white male, age 50, who first discovered that he was a bleeder when he was a child and had a tooth pulled. Ever since, knowing his disposition to bleed, he has taken care not to wound himself. Not long ago, he had an attack of purpura hemorrhagica, and only two years before the present illness he suffered from hematuria that lasted ten days. On September 29, 1915, he noticed that he was urinating blood. His physician was called the next day, as the hemorrhage had grown worse. At this time, the urine was so bloody that it looked almost black, but the patient stated he felt well, had no pain in the bladder or in the kidney region, and that his urine flowed freely. There was no fever and the pulse was 80. Both cystoscopic and rectal examination were refused.

Doctor Points tried a variety of remedies, including injections of normal horse-serum, potassium citrate, urotropin, calcium lactate, chloretone, adrenalin, gallic acid, ergot, gelatin, and tincture of ferric chloride. All these remedies were given a fair trial, but (with the exception of the horse-serum) they produced no effect upon the flow of blood. Finally a second dose of horse-serum was suggested, and injected. As a result, the hemorrhage diminished about one-half, but did not stop entirely, as it did (for a short time) after the first injection of this substance. Within twelve hours, blood was flowing as freely as ever. In the meantime, the patient's blood pressure was going down lower and lower, until it finally dropped to 70, while the pulse increased to 135. Now we will let Doctor Points tell, in his own language, his experience with emetine.

"In my quest for a remedy, I read of the great results derived from the use of ipecac and its alkaloid, emetine, in cases of hemorrhage. I at once procured a supply of emetine in ampules of 1-2 grain each and gave my patient two doses a day, eight hours apart, subcutaneously. The subcutaneous

injection had no effect at all, the urine remaining as bloody as ever. The fourth day I began by giving 1-2 grain of emetine intravenously, selecting a large vein at the bend of the elbow. I repeated this injection that evening, eight hours later. Two more injections were given on the fifth day and one on the morning of the sixth day. During all this time the patient's urine showed no improvement. But, on the evening of the sixth day, the urine became so much lighter in color that in spite of all my entreaties I could not induce my patient to take another dose, he being firmly convinced that this was a favorable omen and the bleeding would now stop of itself.

"But next morning the urine was as red as at the beginning. The patient then declared his willingness to submit to my suggestions without any further question. I gave him two injections of emetine a day intravenously for two and a half days, and on the evening of the third day, as on the previous occasion, the blood diminished about one-half. But he was docile and took a sixth injection that evening, and a seventh the next morning. By that time, his urine looked almost normal in color, the albumin had reduced to 1-2 percent, and I decided not to give any more emetine until I would see him that afternoon. On my return his urine was perfectly clear, and it has remained so ever since, some six weeks."

In the final discussion of this paper, Doctor Points states that, in his opinion, emetine is a valuable addition to our armamentarium which is only just now coming into its own. He ascribes the favorable outcome of the case to the emetine treatment.

TYPHOID FEVER IN FRANCE

At a meeting of the Medico-Chirurgical Society of the Fourth Army of France, Boidin declared (*Paris Méd.*, Feb. 19, p. 212), basing his remarks upon personal observation, that the mortality from various typhoidal diseases had decidedly diminished since the autumn of 1914, at which time it reached 18 percent. In the summer and autumn of 1915, the mortality amounted to but 1.6 percent.

This reduction, Boidin believes, is the result of the progressive, and now nearly complete, disappearance of Eberthian (true) typhoid fever, due to the general introduction of antityphoid vaccination. At the present time, not more than 5 or 6 percent of the cases are of the true typhoid type.

Antityphoid vaccination, in the vast majority of cases, protects only against true typhoid fever, not against the paratyphoid. As a result, the latter condition now constitutes about 87 of the cases occurring among individuals who had been prophylactically vaccinated.

These paratyphoid attacks are, for the most part, very mild. Thus, for instance, in the hospital where Boidin was stationed, it had been observed that, while the mortality from typhoid fever varied between 14 and 17 percent, that from paratyphoid B reached only 6 percent, and that from paratyphoid A only 1.4 percent.

These reports, constantly accumulating from all the armies of Europe, have firmly established the prophylactic power of antityphoid vaccination. It is significant, moreover, that Castellani and also others are now giving combined vaccination, in order to afford protection, not only against typhoid fever, but also against the two forms of paratyphoid, and often cholera as well.

A NEW SIGN OF PULMONARY TUBERCULOSIS

A new sign of pulmonary tuberculosis, which is believed to be of considerable diagnostic value, is described by Dr. Clarence M. Wheaton in *The Journal of the American Medical Association*.

In his work at the clinic of Rush Medical College, Doctor Wheaton observed that the skin of tuberculous persons pulled away from the fascia was freely movable and non-adherent. This phenomenon was again striking in cases of early unilateral involvement, and subsequent examination showed that the sign was more clearly discernible on the tuberculous side, while in bilateral involvement there was equal distinctness over both lungs. The sign is elicited as follows:

The patient, with hands resting in the lap, faces the physician, looking straight to the front. The integument is then pinched between the thumb and index-finger and pulled away from the muscle-fascia. It will be observed that over the area of infiltration the integument can be drawn from the chest-wall with ease, as compared with the side where there is healthy lung, and if now rolled between the fingers it will feel in consistency much thinner than a fold of skin taken from the sound side.

This condition or change in the integument of the chest-wall has been observed in very

early cases of tuberculous infiltration, with little disintegration of the lungs, both in adults and children. Whether this is a true atrophy of the skin or due to muscle or nerve degeneration, or in some measure dependent on immobility of the chest-wall, Wheaton is at this time unable to say.

SIGNS OF IMPENDING DEATH

There are few single symptoms pathognomonic of impending death, writes Thomas F. Reilly in the *Journal of the American Medical Association* (Jan. 15, p. 160), but there are many striking symptoms which commonly precede death, and with these the physician should be familiar. We can mention only a few of those referred to in Doctor Reilly's exhaustive paper in the small space available in these pages.

Speaking first of pulse indications, Reilly says that a pulse which is irregular for the first time in disease is usually cause for grave alarm.

When the patient is in the recumbent position and the pulse disappears from the wrist for the first time, he rarely recovers, except in cases of true cardiac disease or in sudden, severe hemorrhage.

Pulsus alternans, when it can be appreciated by the finger, always means death within a short space of time—in cardiac disease, within, certainly, a month.

If the pulse of an adult is under 80, then it is safe to say that death is at least more than twelve hours away—but this is not always true of the aged, a slow pulse often being present in these patients up to the moment of death. On the other hand, in old persons, a pulse of 140 means death within a few hours, at most. In children, if the pulse is under 120, death is extremely rare within six hours. Even in coma, a pulse of 100 means that death is at least eight or ten hours removed.

In an adult, with the exception of paroxysmal tachycardia, exophthalmic goiter, pericarditis, and pulmonary tuberculosis, a pulse of 140, continued for more than an hour and not due to some accidental complication, means death. Except in pericarditis, any pulse gradually mounting to 160 per minute presages a fatal termination.

In general, in acute diseases, a pulse that is steadily increasing in frequency hour by hour portends early dissolution, provided other signs of serious illness are present.

Gallop-rhythm, not associated with rheumatic carditis, is always fatal.

In the case of a very ill patient whose pulse has been rapid for weeks and then drops down to 50 or 60, with no marked amelioration of symptoms, except in paroxysmal tachycardia, a fatal termination may be expected shortly.

A persistent, firm pulse in coma associated with hemiplegia is a fatal sign. In all infectious diseases, a sharp, strong, distinct pulmonary valve sound means that death will not take place for at least twelve hours.

Speaking of blood-pressure changes, respiration, and the like, Reilly makes the following observations:

When a very high blood pressure, say of 230, falls suddenly below 100, without any sign of hemorrhage, a fatal issue is in sight.

In an adult, a fall to 40 usually indicates a fatal outcome.

The appearance of well-marked Cheyne-Stokes type of respiration is practically always a sign that death is near, although it may be deferred for a few weeks. If there is associated auricular fibrillation, it does not have the same fatal prognosis as in other conditions.

If the heart will react to digitalis, the patient may recover and live for years, even if the Cheyne-Stokes phenomenon is present.

In any case, when rapid breathing follows the onset of Cheyne-Stokes respiration, death is at hand.

When there is marked disproportion in the length of inspiration as compared with expiration, the condition is very serious; and if coupled with a rapid pulse (except in shock or hemorrhage), the combination uniformly presages a fatal ending. A continued sighing respiration has much the same significance.

In a sick person, the persistent up and down motion of the Adam's apple, such as is seen temporarily in normal patients is the act of swallowing, means, according to the late Dr. John Shrady, a rapidly fatal issue. The phenomenon is probably due to failing of the vagus-center. It is so commonly associated with other signs that it is not of much value except when present in a sleeping patient.

The so-called "death-rattle" of the laity is positively a fatal sign.

The presence of black or bloody-tinged saliva running out of the side of the mouth in a comatose patient is an omen of death.

In the last few minutes of life, there sometimes is an enormous quantity of white frothy fluid flowing in a steady stream from the nostrils. When this occurs, death is only a matter of minutes.

In any very sick patient whose pupillary reflexes were previously normal, but in whom there is now no reaction of the pupil to light, death is at hand. To this general statement, there are some exceptions, namely, in the spinal myosis of the aged, in syphilis or its sequels, brain diseases, optic atrophy, fainting, and hemorrhage. A sluggish reaction under the same circumstances is serious, but not necessarily fatal.

In most diseases, just before death, the pupil dilates widely. Tennyson states this well when he says, "As unto dying eyes the hollow casement slowly grows a glimmering square," meaning thereby that the dilated pupil is unable to distinguish sharply the window-panes.

A glazed pupil usually means that death is at hand. The presence of a film over the eye is always a fatal sign. The death-stare, or fixed eye, is probably due to the dilated non-reactive pupil, although sometimes, if the patient's attention is directed to it, he can actually count the fingers of the hand. It is a fatal sign.

When the eyes are half-open during sleep, the patient is not necessarily *in extremis*, but it is a sign of much gravity, especially if it is not due to prostration from diarrhea.

The well-known Hippocratic facies is an invariable sign of death. The features presented are: pallor of the face, pinched nostrils, sunken hollow eyes, collapsed temples, cold and translucent ears with the lobes turned out, dropping of the lower jaw, haziness of the cornea, and fixed eyes.

A temperature of 108° F. is not recovered from except in heatstrokes. A temperature of 107 degrees lasting more than two hours is rarely recovered from. A rising temperature on the second day after the occurrence of hemiplegia is fatal. A temperature of 106 degrees in these cases at any time within the first three or four days means death.

Loss of sphincter control is always a grave sign, especially when coma is not present. When both vesical and rectal sphincters are paralyzed, recovery is uncommon, except in coma and nervous diseases.

The vomiting of frothy mucus mixed with blood, except in acute hemorrhage or in convulsions, is a fairly certain sign of approaching death.

Finally, to quote Doctor Reilly exactly, "In any disease, the presentiment of a fatal issue by the patient at the onset is a bad omen. This is particularly true if severe pain is not present. I have often tried to argue with the patient, in an attempt to eradicate this seem-

ing delusion from his mind, but, in most instances, I am sorry to say, the delusion of hopefulness really existed in my own mind. It gives me a psychic shiver when a patient who is well-balanced mentally and who is suffering from a serious but not necessarily fatal illness says, 'Doctor, I am going to die. I know it.' Likewise, when a patient shows no interest in a consultation held over his bedside, there is grave cause for alarm. When a uremic patient becomes jolly and joyous, a serious condition is present, and very often a fatal termination is near at hand."

THERAPEUTIC INDICATIONS FOR CORPUS LUTEUM

Preparations of corpus luteum (also called lutein—see "New and Non-Official Remedies," 1915 edition, p. 218) are still of rather undetermined value, although considerable interesting clinical work with this remedy has been reported. In *The New York Medical Journal* for January 29 (p. 227), Louis T. de M. Sajous says that no active principle of this body is available as yet, unless the lipid preparations of Iscovesco are to be considered as such. The material now chiefly employed consists of dried corpora lutea of cows or sows, and this is administered in tablets, capsules or cachets, in 5- to 10-grain doses three times daily. The dried substance usually represents from five to six times its weight of fresh luteal tissue. Preparations collected exclusively from pregnant animals are considered most efficient.

Corpus-luteum therapy, says Sajous, has been used chiefly for the treatment of the disturbances of menstruation and in the correction of the various disorders of the menopause; the best results having been obtained in the climacteric group of cases in which such symptoms as "hot flashes," excessive perspiration, the psychoneuroses, vesical irritation, and digestive difficulties were most marked. In such cases, relief often follows the use of corpus luteum, although it is necessary to continue the remedy for some time, in order to secure permanency of results.

According to Dannreuther, pruritus vulvæ is sometimes relieved by this remedy; this author also advises the routine administration of this body prior to the menopause and following hysterectomy and oophorectomy. Menstrual disturbances amenable to corpus luteum include functional amenorrhea and dysmenorrhea of ovarian origin. Ac-

cording to Dannreuther again, it is particularly indicated in the treatment of these disorders in the slightly obese anemic type of young women who soon after puberty begin to complain of headache, malaise, nervousness, and constipation, together with scanty menstruation and possibly acne vulgaris. The remedy should be given in association with hygienic and tonic treatment.

Sajous advises corpus luteum in cases of dysmenorrhea showing symptoms of ovarian insufficiency, as indicated by irritability, malaise, depression, headache, and scanty menstruation. The drug has also been advised in the treatment of sterility, particularly when associated with infantilism of the reproductive organs, as well as for treatment of a tendency to repeated abortion and for hyperemesis in the early months of pregnancy.

THE TONGUE-SIGN IN TYPHUS

In view of the prevalence of typhus in Europe and the possibility that it may visit us in America, the following "tongue-sign," originally described by Funey and outlined in detail by Remlinger (*Paris Méd.*, Jan. 8, p. 42), is worthy to be kept in mind. This sign is as follows:

If a patient suffering from *typhoid* fever is requested by the physician to put out his tongue, he does so without difficulty, and so completely that it can be examined carefully.

On the other hand, if a patient suffering from *typhus* fever is requested to put out his tongue, the patient has great difficulty in so doing, and even then he can extrude the tongue only incompletely. As Remlinger says, the patient experiences the greatest difficulty in showing the tongue, which hardly passes the dental arch; in fact, it is often held beneath the palate and appears to be drawn back toward the pharynx. Sometimes there is simultaneously a slight trismus, provoked by contraction of the masseters.

VISCOSITY OF THE BLOOD

A. Gulbrink confirms the conclusions, previously arrived at by Holmgrens, concerning the question as to what determines the degree of the blood's viscousness; his investigations showing (*Beitr. z. Klin. d. Tub.*) that this depends solely upon the absolute number of polymorphonuclear leukocytes present. The number of lymphocytes in a given measure is without any influence. The viscosity of the fluid rises regularly with the increase of the particular leukocytes named.

Miscellaneous Articles

The Army of Peace and Conservation

MUCH has been said during the last year or so about preparedness, and putting our country in a condition to defend itself against attacks by external foes and maintain our national honor among the family of nations. Many plans have been suggested for carrying this object into effect, but none, so far as I have seen, goes to the root of the matter and has in view the most thorough training of our young men for the highest industrial as well as military efficiency and the best citizenship.

Every keen and thoughtful observer knows that a large percentage of our boys at the age of eighteen or nineteen years are entirely destitute of any adequate knowledge of the practical affairs of life and have never received the discipline and training necessary to fit them for the most efficient and best citizenship. How often have we been told recently that they would prove utterly inefficient as soldiers and that it would take a year or more to drill them into a proper state of efficiency. This may all be true, but I want to add that the same thing applies to their entering upon the other vocations of life.

It may be asked, How can these weaknesses and inefficiencies be corrected? My suggestion is as follows: Pass a federal law organizing a great army of peace and conservation of the nation's resources. Draft every physically fit and able-bodied young man at nineteen years of age to serve for two years in this army. This ought to furnish from one-half million to a million men each year. This great army could be divided into several divisions, or departments, as follows:

1. *The Department of Hygiene, Sanitation, and Health.*—This army should be put to work under the direction of competent experts, to drain and reclaim the marshes and swamps of our country and kill off the rats, gophers, prairie-dogs, as well as the mosquitoes, fleas, flies, ticks, and other insect-pests that carry infection and propagate malaria, plague,

yellow-fever, typhus, typhoid fever, tuberculosis, and various other diseases.

Do not sneer at this, please, because it is not designed principally to protect horses, cattle, hogs, sheep, poultry and other animals, although it would protect these also; and because it has no superficially apparent financial foundation, for if properly carried out this work would inaugurate in our country such an era of prosperity as the world has never seen.

According to the census of health reports for 1913, over one-half million people died during that year in the United States from preventable diseases. When the economic value of these lives is computed and in addition to this the loss from sickness with all its attendant expenses, the lost time and impaired efficiency of the workers, are added, we have a sum which amounts to two or three billion dollars in *one year*. Under proper hygienic living and sanitary regulations, in a few years, at least half these lives could be saved and much of the suffering and disease as well as poverty could be banished from our nation, and leave us a saner, healthier, and happier people.

2. *The Good-Roads Army.*—Another division of this army should be put to work making a complete system of good roads all over the country. What this would mean in comfort, pleasure, and profit to the automobilists, farmers, and everyone who travels on roads, only those who experience the annoyance, discomfort, and losses arising from the condition of the nation's roads at the present time can appreciate.

3. *The Flood-Preventing Army.*—This department should construct, in the Mississippi, Missouri, Ohio, and other river valleys and along the headquarters of the streams, a system of reservoirs, to store all flood-waters. This not only would do away with the loss of life and property caused by floods and save the great yearly expense for repairs on the rivers, but would furnish water for irrigation and power purposes when the rivers are low.

This is no mere visionary dream, as the plan was carefully worked out by one of the best engineers in the country, a few years ago, and found to be perfectly feasible.

4. *The Reclamation Army.*—This army should construct the great reservoirs, to reclaim the arid lands of the country. It should look after the forest-reserves, save the fallen timber, remove brush and other waste materials, and make the occurrence of forest fires, such as are destroying many lives and millions of dollars worth of property every year, an impossibility.

5. *Military Preparedness.*—In connection with each one of these armies, there should be a corps of officers, to instruct the young men in military drill and tactics, and an hour each day or a half day each week should be devoted to this work. If every Saturday forenoon were devoted to military drill and the Saturday afternoons were given to the young men to enjoy themselves in games as football, baseball, and other field-sports, I believe they would enter into the work with pleasure and vim and make it a great success.

Under such a system as this, a large body of young men not only would receive adequate military training, but they would, in addition, receive that valuable manual training and discipline so necessary to fit them for the work of the world, no matter what vocation they might elect to follow. They would also retain a true perspective of the relative importance of the military and civic function and would not idealize and exalt the position and calling of the soldier above their true place.

Under proper management and control, they would, at the end of two years, pass out of the army a strong, healthy, disciplined body of men, to enter upon the industrial and professional work of the nation. They would become reserves, and for a certain specified number of years would be required to devote a certain amount of time each year to military drill and be subject to the call of their country when it needed their services. In five or ten years' time, our country would have from five to ten millions of trained men; her health conditions and all her natural resources would be improved to an enormous extent, and she would stand as an example to be emulated and imitated by the whole world; and, while accomplishing all these beneficent results, ordinary labor would not be interfered with, because thousands of masons, bricklayers, carpenters and other mechanics would be required to assist in the work and to instruct the young men in their respective industrial work.

The above plan would not interfere with Lieutenant Steever's system of military training for high-school boys so successfully carried out in Wyoming during the last few years. Indeed, it would supplement and give an impetus to it, because it would be an inducement for many more boys to enter and complete the high-school course and, by taking the Steever system of military training, secure exemption from service in this peace army.

E. STUEVER.

Fort Collins, Colo.

A POEM BY DR. JAMES H. FERSTER

In the March number of *The Journal of the American Veterinary Medical Association*, we find a notice of the death of one of our old friends, Dr. James H. Ferster, of New York City. Doctor Ferster was one of Manhattan's most prominent veterinary practitioners. A glimpse of his character may be obtained by reading the following poem, which he contributed to *The Trotter and Pacer* some months ago. This poem was written only a few weeks before his death:

I place one hand in God's and then I know
I cannot fall; and then, as far below
As I can reach, I stretch my other hand
And in the slum and depth of wickedness I find
A fallen fellow man. I shout: "Hello!"
'Tis Christmas morn—look not below,
But up." I grasp his hand and hold it tight
As mine is held by Thee, and pray for might
To help me put his trembling hand in Thine.
Then Thou wilt draw him by Thy power divine
Unto Thyself. Then he, like me, will stand,
One hand in thine, the other stretched toward man.
For, he can reach some man that I cannot;
He knows some tender chord I have forgot.
And, as I see him lift and place some other's hand
In Thine, I quietly give thanks that Thy great plan
For saving man is through his fellow man.
Give thanks for more: give thanks that God saw fit
In saving men to let me help a bit!

AN OMISSION FROM DOCTOR COPE'S ARTICLE ON NOSEBLEED

Dr. C. S. Cope, of Detroit, has written us that, unfortunately, there inadvertently was omitted an important sentence or paragraph from his article on nosebleed, as printed in our February number (p. 179). In the directions for plugging the nose, the article should have read as follows, which the reader may correct in his copy of CLINICAL MEDICINE:

"Moisten a small pledget of cotton with vinegar, and push up into the nose; and at once take the remaining dry pledget and close the other nostril. You now have, as it were, a cork in both ends of the bottle. The ends

of the strings are carried up over the cheek and made fast with a small piece of adhesive plaster. Cut off the redundant ends and the work is done."

AN ECHO FROM THE DARDANELLES

You have expressed a wish for a reply to your last notice concerning your journal and were wondering why Doctor Wilson hadn't renewed his subscription.

Doctor Wilson left for the front last July and has been most of his time at the Dardanelles, where he has seen and endured many of the terrible sights and sounds of this terrible war. Recently he was put on a hospital-ship and, although the dangers are greater and he has as many as 160 patients to look after, he has more comforts and better food.

The Doctor will no doubt subscribe for the journal on his return (D. V.), for his appreciation of the value of your magazine would be proved to you if you saw how he treasures each copy and the many helpful thoughts and suggestions he has gotten from CLINICAL MEDICINE.

MYRTLE WILSON.

Toronto, Ont., Can.

HEROIC QUININE DOSAGE IN PNEUMONIA

During the winter of 1883, Prof. A. B. Palmer, for thirty years dean of the University of Michigan, and professor of practice of medicine, included in his lecture on the treatment of pneumonia the treatment given below in abstract. I have followed the treatment since then and found that in almost all cases it results in speedy recovery, just as indicated.

I am firmly of the opinion that this treatment is abortive and that the quinine is destructive to the pneumococci. Usually the patient does not respond for from one to three days, but when the symptoms suddenly disappear the patient is convalescent. I have found that such patients bear the quinine well and that it is followed by but little, if any, unpleasantness. I have used it in even larger doses, even in very small children, and have seen patients with symptoms of the most alarming character respond to the treatment and make speedy recovery.

The extracts from Professor Palmer's lecture are as follows:

"The particular method in the treatment of common pneumonia, which for the last

several years I have pursued with such results as strongly to recommend it to others, is briefly as follows:

"When called to a patient within twelve to twenty-four hours after the chill or at any time before any considerable exudate has occurred, I immediately give from 6 to 10 grains of quinine, together with 1-4 to 1-3 grain of morphine, which almost invariably in a short time (from one-half to two hours) induces free perspiration and reduction of temperature. I then repeat the quinine in doses of from 4 to 8 grains in from two to three hours and, unless all pain and especially uneasiness is relieved, I add another dose of morphine in four or six hours; but, by all means, continue the quinine in one of the last-mentioned doses until from 30 to 50, or sometimes 60, grains are given. Sometimes from 20 to 25 grains will be sufficient, given in these divided doses, or, if preferred, in doses somewhat smaller but more frequently repeated. But, as the larger quantity is innocent and may be needed, I prefer to give at least 30 and often as much as 40 grains in from twelve to twenty-four hours.

"The effects desired, and certainly as a rule produced, are: a decided reduction of temperature, a marked diminution in the frequency of the pulse, a decided moisture of the skin or free sweating, a slower and more easy respiration, a relief from pain and feeling of fulness in the chest, a diminution of the cough and of the tenacious and bloody character of the expectoration; in short, not only is there a checking of the fever, but of all the evidences, general and local, of the pulmonary engorgement and inflammation, and the quantity of medicine to be given will depend much upon the completeness of these effects produced.

"The slight deafness and ringing in the ears which may or may not result from these doses is a matter of very little consequence, almost always quite temporary, and should have no influence in determining the quantity given. A small quantity of quinine will produce the phenomena in some, while large doses will fail to do so in others, and neither in pneumonia nor in ague are they the measure of the medicinal effect of the remedy or the index of the quantity that will be required or borne.

"As a rule, the treatment required after this will be a general laxative or, if the tongue is much coated, a few grains of blue mass, followed in a few hours by a mild saline cathartic, and this, in turn, by some mild eliminative treatment.

"There may be cases, however early undertaken, that will resist this treatment, but in those occurring under my observation the results as indicated, where the plan has been fairly and thoroughly carried out, with scarcely a well-marked exception, have followed. These cases have been virtually aborted—convalescence speedily occurring, and nothing but a moderate congestion of the lung remaining and this only for a few days.

"If the treatment be commenced much later, and especially if hepatization has occurred and the dyspnea is marked, the morphine must be omitted or given with more caution, the quinine to be given in the same way; the result very generally being, to bring down the temperature and check the extension of the disease, but, of course, not so speedily as to remove all its consequences. And, if marked structural changes have occurred, time will be required and the continuance of more or less pathological action before the lung is restored to its normal state.

"At whatever stage the patient is seen, the quinine in these free doses should be given and the full physiological and therapeutic effect as described should be obtained.

"Even when this treatment is commenced in the hepatized or more advanced stages, the subsequent course of the disease is usually materially shortened, rendered milder and less dangerous.

"Should this treatment in any case fail to produce all the results claimed, it will be harmless at least and other remedies may be used to conduct the case to a favorable termination. A repetition of the quinine and the use of the other means will generally be required when the treatment has commenced at an advanced stage of the disease."

"L."

Kansas.

[The preceding letter is of special interest at the present time, in view of the great interest being taken in the use of optochin, or ethylhydrocuprein (a quinine derivative) in the treatment of pneumonia. This "quinine" treatment was discussed at some length in Doctor Biehn's paper, published in our December number. An abstract describing German experiences with this remedy will be found on page 350, this issue. The trouble with the optochin is that, while it is exceedingly deadly for the pneumococcus it is also a little too toxic for *homo sapiens*—hence the efforts to intensify its activity by conjoint serum treatment.

The commonly used quinine salts have been employed in treating pneumonia by several generations of physicians, and so many have spoken well of its action in this disease that we are not disposed to be too skeptical. I fully believe it has merit, though its usefulness is limited. It undoubtedly stimulates leukocytosis, and we all know the importance of that phenomenon, and the grave prognostic import of a low leukocyte count.

Personally, I should not feel like "resting my case" on the action of quinine. We need the defervescent alkaloids, aconitine, and veratrine, supported by strychnine and digitalin according to indications. These I consider vitally important. Also, we need eliminants, intestinal antiseptics and bacterins. However, I will not try to go deeply into problems of treatment here.—Ed.]

THE CONFESSION OF AN UNSUCCESSFUL PRACTITIONER

Here I am, 55 years old. I am a little fellow, 120 pounds; never did any hard work, and don't look my age by ten years.

I was graduated, at 24, from a very good school, requiring three courses of five months each, some thirty years ago. I did not know much about medicine when I received my sheepskin, but I could talk glibly on medical topics and got the credit of knowing more than I really did.

I began practice in a little Kentucky sawmill-town, because there were no other doctors there. That was a mistake—don't you ever do it. One thinks he can pick up a little ready money and then go to another location. The former is questionable, the latter is true, but it is a waste of time. Go where you want to live, and fight and starve it out. This is the better way in the long run.

I stayed there, in that sawmill-town, two years, got some valuable experience, familiarized myself with the physical and clinical properties of drugs, and made expenses. One incident will illustrate how I got experience.

A baby in the neighborhood had been given up to die by the old attending physician. My medical education regarding these diseases of children had been very meagre. I had had only a few lectures on pediatrics, and as I was not interested in children, I had paid very little attention to them. Well, the old women decided that the "young doctor" might be able to do something. As I knew very little of medicine and nothing of children, I had nothing to lose. I remem-

ber now that I administered minute doses of bismuth and saccharated pepsin, stopped all food, looked as wise as I could under the circumstances, said very little (didn't know what to say), and took my departure. The child got well. No, I did not cure it—I said, *it got well*. I was a hero. Suddenly my reputation was established. Alas for my ignorance, people began to send for me for their sick children. Then it was that I got down my old neglected Smith and went at it. The more I studied that book, the better I liked it. I began to notice children, to take an interest in them, and I began to like them, too.

My practice grew, and years afterward I was known as a great baby-doctor. I finally gave that work up, because the people who needed me worst were the least able to pay; and I had to make a living; so, I drifted into other lines. So much for that.

My next location was in Florida, where I formed a partnership with the leading doctor. He had a large business, was popular, but careless about his collections. As I was a poor mixer, I took charge of the books, looked after the collections, and did a little work. Most of the real money, however, came from the old man's clientele, so, after a year or two, we dissolved the partnership and I tried it alone.

About this time, I had some family troubles, and, as I did not know the trick of getting practice, I soon fell behind, closed my office, and returned to Kentucky. Here, I opened a practice in a small school-town, where I remained two years, saving up about two hundred dollars.

I took this money and went to a boom-town in the eastern part of the state, where I invested in real estate. In five months, I had about five thousand dollars' worth of property, a good drug store, and was prosperous. My store burned, the town went down, deferred payments came due, and I left in the fall for the west with fifty dollars that my brother had loaned me.

After roaming around about a year, doing such things as I could, I found myself in a western city, where I got a job in a hospital that had about a hundred beds. I remained here a year, learning more medicine and surgery than I ever knew before. Then the city administration changed and I was let out. My salary, \$50 a month, I had loaned to the nurses, at interest, and when I was deposed they beat me out of all of it.

Then I came south to my present location, arriving here with a five-dollar bill in my

pocket. I formed a partnership with the leading doctor, and we prospered. I had lived well and, besides, at the end of a year, had two hundred dollars in the little Jim-crow bank of the town. Our local bank failed and made an assignment, so, I lost that little accumulation.

My partner knew very little of medicine, but he was quite a society man, a good mixer and dresser, and we had a good business. I did most of the surgery, and when he or we had a bad case it was I who burned the midnight oil, worrying over it and pulling back to life many who would have died but for my special effort. At the end of five years, I had enough of it—me doing the work, he getting the credit; for, as I said, he was a good mixer, and it was a fact that I would explain a perplexity to him and he would explain it to the family much better than I possibly could.

I then opened an office for myself, which I maintained about two years. Then I went to Europe for a year. I lived in Paris and attended the famous clinics of that gay city. I returned home and resumed practice. During all these years, I was a member of the medical societies. I paid my good money to the railroads, to attend the meetings, while the other doctors rode on passes. I read papers that were well received, and I was often on for a humorous toast at the banquets. I also wrote some for the medical journals—thankless task. My practice was never large, for I always disliked exertion; still, it was adequate for all my needs and I invested the surplus in local real estate. This was another error. For, property went down and taxes went up; deferred payments fell due and I had to borrow from the banks to meet them, and then I had to hustle to meet the interest; in the end, being forced to sacrifice some of it in order to meet the principal; so, instead of growing richer, I became poorer.

Then—would you believe it?—I got married, and now real expense began. Before this, I could sleep in my office, eat at some restaurant where they owed me, and could get along with very little money when practice and collections were slack. Now, though, I had to have a house, a home, a 'phone, light, heat, fuel; had to provide groceries and clothing for two, and these of better quality than I had had before. Consequently, I made no headway in getting rid of my debts—on the contrary, was forced to sacrifice more of my property in order to meet the deficit.

Before marriage, I had been in the habit of going away every year to some large city, to attend the clinics, or to California or Mexico: also to buy any new book or journal that I fancied. Now, the only traveling done by our family consisted in the visits of the wife to her parents living in another state. I myself remained at home.

I grew morbid. I hated the people who hired me but never paid. The very 'phone got on my nerves. Someone would ring up and say, "You are wanted down at So-and-So's." "Wanted!" just as though I were a thing to be whistled for, like a dog. By and by, a strong aversion to general practice grew on me; besides, I was getting disgusted with medical societies and the unethical doings of doctors. They talked against commissions paid to druggists, but paid them; they had fits if a member's name appeared in the papers, but they advertised in sundry and divers indirect ways. Then they went surgery-mad and began to cut everybody that had the price. What I mean is, that those standing highest in the societies did these things. Later, those who could not operate, because they had had no training, took up the surgical work, and they began to learn on their patients. It was awful. Yet, I venture to say that my town is no worse than any other. The country has gone surgery-mad.

Don't understand me as opposing legitimate surgery—as a matter of fact, I did the first surgical work ever seen in this town. But, I had a rule that was a hard one for me to get over, and that, moreover, has got me into my present "bad fix." This rule was the old fashioned Golden Rule, never to do to another that which you would not be willing to have done to yourself if your position with regard to the patient were reversed. This rule of justice has kept me from making much money; but, at least, it is not the thought that I cut off someone before his time that keeps me awake nights. The following may serve to exemplify my meaning:

A married woman came to me for treatment, and it looked as though she had to have an operation (the nature of the trouble is not material here), and I told her so. She was willing. The price was agreed upon. As the condition was not an urgent one, I sent her home with a reconstructive, feeling that she would make a better recovery for preliminary treatment. She returned at the specified time, bringing the money with her, one hundred dollars. An examination proved that she was so much better than when she

left me that I told her that she did not need an operation. How many other doctors do you know—poor fellows like me—that would do this thing?

You think, no doubt, that I am making myself out a pretty honest sort of fellow. Right you are. I *am* honest. That is why I am so darn poor. And now the high tide of practice has moved on past my door.

I am making an effort to do a little chronic-disease work, which I can do in my office without going out. I can not compete with the younger men—I do not understand the microscope. I am rusty as an operator and fear to attempt operating, even if I could get suitable cases. I cannot go out nights; besides, only those who cannot get a doctor with an auto-car will call me, and they are no good.

My position is similar to that of many other doctors in this land of ours, who, having given the best years of their lives to their profession, now find themselves laid on the shelf before they are incapacitated.

What are we to do? I could still do office-work, if I could get the patients. I am particularly strong on curing piles and well fitted for doing that work, but those victims who have money go elsewhere, while those who are broke make unreasonable demands, besides being more ungrateful for what you do for them than those who pay.

Pauper practice is a most undesirable practice. Mark that down. If you make good, they will send you more of their stripe; if you fail, they will ruin your reputation, if they can. Pauper surgery is even worse; for, these people will get a shyster lawyer to sue you for malpractice, and the average hayseed jury will give a verdict against you. Even if you are financially protected by an insurance company and do manage to win the suit, the very fact that you have been sued will injure you in the community.

Again I ask, What can we do? I know no other trade. My wife thinks I could make a living at writing. Well, maybe I could, if I had begun earlier. But, at my age, it is one thing to write a rambling letter to a medical editor, who is used to revising the Mss of the average country doctor, and quite another thing to write an article for a lay magazine for which you expect real dollars.

Farm or garden? I don't know the first thing about either; besides, I am not strong enough to do manual labor, neither do I have the inclination to do aught but the chores and tend the horse—which latter I sold

pending the time when I can "afford a car."

I still owe \$500, and it seems that I am now at the end of my tether; can't even keep up my subscription for my medical journals. And, yet, I "put up a good front," as it is not well to show the world. Folks in this town don't really know just how hard up I am.

Alas, I wonder how many other old boys who may read these lines will recognize in my situation their own as well.

"ROY RAY."

[This is a real letter from a real doctor, who prefers to hide his identity under a pseudonym.—Ed.]

THE PESSIMIST

Dr. J. L. Vaughan, of Brooklyn, New York, writes us as follows:

"When in the February number of the journal I read 'The Optimist,' by Milton Ruggles, the enclosed poem, which may be titled 'The Pessimist,' immediately came into my mind. I am sending it to you, in the hope that you will publish it in *CLINICAL MEDICINE*."

Here is the poem, which, by the way, is good stuff:

Gloomy and despondent, full of dreadful fears,
Joy today and sunshine, nought his spirit cheers;
Fearing, doubting, dreading, his hopes are but few—
This is the pessimist.
Does this mean you?

Never any laughter, life too full of wo,
Looking on the dark side as days come and go,
Losing sweets of friendship, and its blessings, too—
This is the pessimist.
Does this mean you?

Forever crossing bridges that his feet will never reach,
Learning not the lessons that Father Time would teach,
No trusting in the future, can neither dare nor do—
This is the pessimist.
Does this mean you?

MEANING OF THE INDIANA ANTI-NARCOTIC LAW

In your February issue, I notice, on pages 110 and 111, an article concerning the Indiana Anti-Narcotic Law. As secretary of the Indiana State Board of Veterinary Medical Examiners, I submitted to our attorney-general the following:

"*Dear Sir:* The State Board of Veterinary Medical Examiners would like a ruling on the following provision in the state law governing the sale of narcotics:

That nothing in this act shall be construed to prevent the legitimate administering of said drugs, their salts, compounds and derivatives by a duly registered practicing physician, duly licensed veterinarian or duly licensed dentist.

"We desire an opinion on the meaning of the words 'legitimate administering.'"

"Under the provisions of this law, the State Board of Veterinary Medical Examiners may be called upon to revoke licenses, as one of the penalties for violation is the revocation of the license held by the offender, and in this way, should the matter involve a veterinarian, the question of the offense and penalty would come before our board.

"That we may be prepared to deal with the matter and answer questions submitted to us, we ask for this opinion."

To the foregoing, I received the following answer:

"*My Dear Sir:* I am sending you enclosed a copy of an opinion of Attorney-General Thomas M. Honan, made on the 28th of January, 1913, which I think fully answers your inquiry.

EVAN B. STOTSENBERG, *Attorney-General*.

HONAN OPINION (COPY)

"*My Dear Sir:* In reply to your questions concerning the effect of certain provisions of House Bill 277, known as the Keegan Bill, I beg to say that the provision prohibiting any person, except a licensed pharmacist, to retail, sell or give away cocaine, etc., does not prohibit the *bona fide* use or administration of such drugs by a licensed physician, dentist or veterinarian in his practice. It is my opinion that *bona fide* dispensation, use or administration of such drugs by a physician, dentist or veterinarian in his practice is neither to retail, sell or give away such drugs.

Furthermore, the bill contemplates that a licensed physician, pharmacist, dentist or veterinarian may buy such drugs of the wholesaler, jobber or manufacturer. In giving the physician, dentist or veterinarian this right, the bill contemplates that the physician, dentist or veterinarian may lawfully use such drugs in other ways than to retail, sell or give them away.

Yours, etc.,

THOS. M. HONAN,
Attorney-General."

If you will get an abstract of an opinion given by the United States District Court, Western District of Tennessee, dated June 1, 1915, you will find there is no limit upon the quantity which a physician may dispense, provided such dispensing is to meet the immediate needs of the patient and is made in good faith and as a medicine.

A summary of the judicial interpretations of the word "administer" will be found in the cases of *McCaughy vs. The State*, 156 Ind. 41. *People vs. Quin*, 50 Barb. (N. Y.) 128; *La Beau vs. People*, 34 N. Y. 223; *Chandler vs. State*, 105 Pac. 375;

Burris vs. State, 84 S.W. 453; State vs. Jones, 53 Atl. (Del.) 958; Filber vs. Dauterman, 26 Wis. 518; Blackburn vs. State, 23 Ohio St., 146.

I wish to submit the above, hoping that it will help your readers and yourself in answering some of the questions asked you about the Indiana Law.

HARVEY J. KANNAL,
*Secretary of the Indiana State Board of
Veterinary Medicine.*

[This correspondence will interest every Indiana reader of CLINICAL MEDICINE, and doubtless many living in other states. The opinion of the attorney-general is clearly set forth, and should set at rest the lingering doubts of physicians who are being intimidated by the suggestion that it is illegal for them to dispense narcotics in Indiana. Our advice is for every such physician to go straight ahead with his practice along usual lines. Obey the law strictly, *do right always*, and tell the scare-mongers and trouble-threateners to go to—!—Ed.]

EMETINE IN TYPHOID FEVER

My cases of typhoid have all completely recovered under the emetine treatment, which more than pays me—thanks to CLINICAL MEDICINE.

As long ago as 1872 I remember reading in Beck's "Materia Medica" the statement that, "of all the medicines in the materia medica, there is none that has so salutary an effect on the intestinal mucous membrane as ipecacuanha." I believe this statement. Ipecac stands in about the same relation to intestinal maladies as quinine does to fevers in general. While specific in some cases (or diseases), it is inhibitory in others.

Some time ago a woman came to me suffering with muscular rheumatism. I gave her six hypodermic doses, 1-2 grain each, of emetine hydrochloride, with complete relief. Her trouble was evidently due to intestinal intoxication.

I have had excellent results in a case of enterocolitis in a child two years old. The temperature dropped from 106° F. to normal in twenty-four hours after two injections of emetine; at the same time I gave Dover's powder by the mouth and high injections of normal salt solution. This is important, as it washes away the mucus and detritus which would keep up the source of poison. This patient has completely recovered. The child was sick about two weeks. These cases often

terminate in death, or recovery is very protracted.

I am of the opinion that this treatment would have come into general practice long ago, but we did not know how to give the remedy in sufficient dosage. As advised by Loomis, I used to narcotize my patient in order to so blunt the sensibility of the stomach as to make it hold the ipecac. I have gotten good results, but one dislikes to put his patient through this ordeal. Thanks to emetine hydrochloride, this method is no longer necessary.

I thank Doctor Frazier for bringing this emetine treatment of typhoid-fever to light.

H. H. SMITH.

Lexington, O.

"TROUT FLIES"

This is the title of a little book published by the Northern Pacific Railroad and prepared very largely by a good friend of every reader of CLINICAL MEDICINE, Dr. Charles Stuart Moody. It tells all about trout fishing, and also something about bears and other game as found in the lakes, streams, and mountains of northern Idaho. Every doctor who is planning to take a vacation this summer and hasn't fully decided where to go should get a copy of this booklet. Write to the nearest agent of the Northern Pacific Railroad or directly to Dr. Charles Stuart Moody, Hope, Idaho.

A PORTABLE HOSPITAL

Kindly give me a rough idea of a portable hospital for 750 men. About two percent, or fifteen men, is a moderate number to be confined to the hospital at any one time.

"CONTRACTOR."

———, Montana.

[We referred "Contractor's" letter to Dr. John A. Hornsby, editor of *The Modern Hospital*, of this city, and asked him to give us the benefit of his advice. Doctor Hornsby's letter follows:

"Perhaps the best answer that I can give to this gentleman is to tell you what I myself did in a similar situation. I was employed in 1899-1900-1901 as surgeon for the White Pass and Yukon Railway on the construction of 125 miles of railway from tidewater to the head of the Yukon river, on the south-eastern coast of Alaska. I was directed to make out a list of requirements for feeding, housing, nursing and providing hospital care

for a maximum of 5000 men, and I was informed that I was to make out the complete inventory of all food, clothing and housing paraphernalia to last at least for one year, because it was entirely possible that after winter closed down we would not be able to get new supplies until the following summer. It is unnecessary for me to tell you any of the interesting incidents of this Arctic service excepting in regard to our portable hospitals.

"We housed all of our sick in tents, and usually these tents were made of standard size 20 x 40 feet of 12-ounce duck. We bought them already made up, and whenever we opened a railroad camp we set up one of these tents as a part of the camp equipment. It was built as follows: newly cut rough timbers were laid down to occupy a space 20 x 40 across the short way of the tent. Then 2 x 4's with 2 feet centers were laid on these timbers and 1 x 12 boards, lightly nailed, were laid on the 2 x 4's. Then 5 feet lengths of 2 x 4's were nailed vertically around the edges of this floor at intervals of 6 feet. Then, on top of these verticals, horizontal 2 x 4's were nailed all around. If we could find a ridge pole 40 feet long in the timber, we cut that, and if we could not, we used a 2 x 4 and made the frame work of a double pitched roof out of the 2 x 4's, resting the lower ends on a horizontal piece that had been set previously. At intervals of 10 feet we ran 2 x 4's across, nailing these to the rough supports at a height of about 7 feet in order to give strength to the structure. Then we stretched our canvas over this frame-work. It came down to within 3 feet of the floor. We then ran 1 x 12's three feet high, all around, excepting at the door end and there we left a space for the door, making the frame out of 2 x 4's. The door was made out of 1 x 4's, with canvas stretched across. Sometimes we had hinges and sometimes pieces of leather, sometimes we used merely a tent flap for the door.

"No matter what the weather was we framed in a bed of sand on the floor, about 6 feet square and down to the ground, cutting a hole through the floor for the purpose and letting the frame go clear down, and coming above the floor about a foot; and on this sand bed we put a Sibley tent stove with a damper in the pipe and with a spark screen at the top of the stack, which went through the tent roof about a foot to one side from the ridge pole and was held in place by a thimble with a hole cut the right size to pass the pipe through. This spark

screen kept the tent from catching fire and we had no trouble after we acquired experience enough to use it. The three 12-inch pieces around the sides of the tent could not be laid so close together but that there would be a little wind come in occasionally; sometimes we chinked these cracks with moss or when non-absorbent cotton was plenty, we used that, or when we had it we used a yard wide piece of canvas all round.

"All this work was put together so lightly that we could knock the tent down in a few minutes and build it again almost as quickly. We moved the material from camp to camp.

"Once I got some erysipelas in one of my camps and because the hospital had not cost very much money I could afford to walk out of it and set fire to the whole business. The fire left my metal beds and springs so that they could be used again, but thoroughly disinfected them. I kept my medicines and surgical supplies in a small 12 x 6 tent which I usually erected for my own occupancy at these camps. The tent was so located that patients were fed from the main cook tent of the camp. I did my surgical work either in my own tent or walled off a small area approximately 10 feet square, at the back of the main hospital tent, using canvas to wall off the space. An operating table of the simplest possible pattern, the kind usually used as a dressing table and which cost about \$25.00, and a few basins, were about all that I carried with me for operating equipment. Chairs for patients were made by the camp carpenter of the old style canvas seat sort. Sometimes my operating table was chopped out of virgin timber.

"There have been better hospitals than those I had on the White Pass road, but I doubt very much whether there ever was a hospital where patients could get greater comfort and more aseptic care. I used these hospital tents on the extreme summit of the coast range of mountains of Alaska where the wind frequently blew 100 miles an hour, where the snows in the course of the winter accumulated to a depth of 40 feet or more and where it was no infrequent occurrence that the temperature went to 60 below zero. In extreme cases, where my camps were above timber line, wood for the camp was carried on mule back as much as 2000 feet above the timber.

"Your inquirer might be able to find portable houses built by people who are in that business, and that would answer the purpose that he is thinking about, but they

will never answer any better, they will cost more, will be infinitely more trouble to move, and two or three uses of them will put them out of business, whereas the scheme that I have outlined has lasted me a dozen times, for a dozen different camps.

"I should have said that the hospital tent made in the way that I have suggested would have cracks between the boards of the floor. We used to sweep accumulations of dirt and dust into these cracks, and in order that there might be no draft up in the room, we shoveled the dirt all around the edge of the tent until the air was completely shut out of the basement.

"I took care of all sorts of surgical cases, typhoids, pneumonias, post-operative cases of all sorts, in fact everything that came along, and if I were going to maintain a hospital service for a field corps again I should certainly do the same way that I did before."

Doctor Hornsby has certainly covered the ground thoroughly. I am sure his letter will prove of value to many readers of *CLINICAL MEDICINE*.—Ed.]

PITUITRIN IN ECLAMPSIA AND PLACENTA PRÆVIA: GOOD SUGGESTION

I reported in *CLINICAL MEDICINE* the successful use of pituitrin in a puerperal-eclampsia case on November 17, 1913. You scouted the idea that it controlled convulsions. I see, from the article on enclosed clipping, that a German reported its use in February, 1914, for eclampsia.

I also used pituitrin in a case of placenta prævia on March 21, 1915, and with success. I believe the patient would have bled to death without it. I believe that in time it will have a well-earned place in both conditions.

J. S. CARRIGER.

Chelsea, Okla.

[In the clipping enclosed, Schlossberger reports (through the *Deutsche Medizinische Wochenschrift*) two cases of puerperal-eclampsia treated with pituitary extract and pantopon, the latter being a proprietary opium preparation. Apparently the pantopon was given for its sedative action and the pituitary preparation to hasten delivery.—Ed.]

STILL MORE ABOUT SORE THROAT

I admit that it is somewhat late to write on throat troubles and their treatment. I do not, in general, disapprove of the treatments recommended in recent numbers of your

valuable journal; still, I think a few remarks on my part may suggest a few additional ideas of value to your readers.

In the first place, I contend that few diseases of the throat are, originally, caused by germ infection. Rather, the cause is to be found in local lesions, such as congestion of some sort and of outer or inner origin, which provide a soil or hotbed for the germs to proliferate in. Wrong eating or other sins against nature may have reduced the resistive power of the blood or lymph circulation. A chill, or what is commonly known as catching cold, whether through insufficient clothing or change of clothing to suit the temperature or state of health, sitting in a cold room, draft, or in wet or sweaty clothes, will do likewise. Carious teeth often cause inflammation of the nerves of these parts, and, so, reduce the resistive power against disease. There will be no follicular tonsillitis, pharyngitis, and the like, when these parts are kept free from becoming diseased.

A healthy throat will resist the germs, or, in other words, will not give hostage to favor development of the germs usually found in such throat troubles. No matter how many diphtheria patients there are in a house, if the throats and noses of the other occupants are healthy they will not contract the disease.

Hence, the first thing to do is, to prevent debilitation of the system, more particularly preventing lesions in the mouth and throat. I could give plenty of illustrations to substantiate these assertions.

Now a few words as to the treatment of acute diseases of the throat. The first instructions should be to take nothing cold into the mouth, much less swallow anything colder than the blood. Why should one refrain from chilly air, and not from chilling the mucous membrane of the mouth and throat? Hot water will do everything, so far as therapeutics is concerned, that cold water will do; and it is sure to do no injury. Hot water will stimulate and will act as a diaphoretic, open the pores and assist the cell action of the body to eliminate waste.

As to elimination and antifebriles, enough has been said. Give continuously laxative salines that cool the blood and carry away waste material.

Now as to diphtheria. If the physician is called in time—that is, when but few, if any, patches have formed—one of the best treatments is, to swab the throat carefully with a solution of peroxide of hydrogen, followed with a 10-percent solution of camphophenique in liquid petrolatum. This the

attending physician should do. Then prescribe a good antiseptic gargle. Allow no cold water to be taken into the mouth, much less to be drank.

If there is present any adenitis, prescribe a 5- or 10-percent ichthyol solution in glycerin, to be applied externally to the glands of the neck and throat and then covered with flannel. Keep the patient in bed! This course will abort diphtheria, if fully carried out.

These are, in the main, my rules of practice, and I never have a second case of diphtheria in the same house where the subsequent patient is not already infected when I get to the house. And I have never had the misfortune of being called upon to make out a death-certificate naming diphtheria, in any case in which I was the physician from the beginning of the attack—I mean a case in which I was the first physician called.

R. WILLMAN.

St. Joseph, Mo.

[Whatever the doctor's opinions about the *cause* of diphtheria, he should never delay the administration of antitoxin.—Ed.]

LOBELIA IN VOMITING. A GOOD SPOT FOR THE SUMMER VACATION

We are just relieved from a two-weeks' snow blockade, and I am sending you a few



When the paths are shoveled out.

pictures, to give you an idea of how deep our snow is out here. We have had eleven feet of snow fall so far this winter. In March, though, we shall have what, I think, no other place can show in the way of sports. Around the big hot spring, the snow disappears and the ground dries rapidly. On a warm March day, a person may watch from where he is seated, a ball-game and a ski contest going on at the same time.



We have "some snow" at Pagosa Springs.

If you know of any doctors who like the outdoors and want some new place to go to this summer, just send them to Pagosa Springs, Colorado. They can get here by auto in the latter part of July or in August. This spot cannot be beaten by any place in this country or any other for beautiful and interesting places, while the trout-fishing here is excellent.

Now just a word about three cases I have had, in the past four years, of pernicious vomiting during the latter part of pregnancy. They were all severe; associated with the vomiting there were a coated tongue, constipation and chills. I gave hypodermic injections of Lloyd's lobelia, up to 1-dram doses, twice a day, for about a week, and they all got along nicely and had no more trouble. All three women have good, healthy babies, and labor was normal. I have also

used this lobelia with splendid success in spasmodic asthma and croup.

I am not trying to boost Lloyd's lobelia, but I believe that in it we have a wonderful remedy.

A. J. NOSSAMAN.

Pagosa Springs, Colo.

AS TO THE VEGETABLE FEVER- REMEDIES

The article on the "various vegetable fever-remedies," by Doctor Ellingwood, in the February number (p. 113), has suggested to me that perhaps my own study and experience in this direction might be of some help to other practitioners.

Aconite.—Patient robust, full-blooded, active. From some sudden depression of the vital forces, exposure to cold, accident, and so on, an invasion of pyogenic bacteria takes place, accompanied by a hard chill and a high fever—a violent reaction—skin hot and dry, and pulse full, strong, and bounding. This, naturally, causes a hyperemia in various organs, any one or more of which may later develop a true inflammation. This hyperemia may be so great as to cause actual bleeding of the organ involved; also this pressure on the nerve-endings causes, usually, severe pain and restlessness, even amounting at times to such an unbearable condition that the patient believes he is going to die and rolls and tosses around the bed in mental as well as physical agony. This condition usually disappears within twenty-four hours and passes into a stage of actual inflammation, of which bryonia is the remedy-type. Consequently, aconite is seldom useful after twenty-four hours, and, as old people are not of this robust and full-blooded type of individuals, aconite is seldom useful in the aged.

It is interesting to note that the next remedy to be considered has been found as a mineral constituent of aconite, hence, some of the interlocking indications. The dose does not need to be large; 5 drops of a good tincture of aconite in two-thirds glassful of water, a teaspoonful of this every fifteen minutes till effect and then discontinued, being my rule.

Ferrum phosphate.—Debilitated subjects, anemic, relaxed musculature. From the same cause as given under aconite, they have localized congestions, here or there, but local in character. There may be vomiting if this congestion is in the stomach; epistaxis, if of the nose; inflammatory conditions following mechanical injuries, and so forth. Useful

in old age, especially; also, in anemic children. I have often used it with good results in the first stages of acute inflammatory rheumatism of the joints.

Like aconite, ferrum phosphate is not indicated after the stage of inflammation has set in, that is, after twenty-four or thirty-six hours. After this stage, other remedies are indicated.

A few scales of ferrum phosphate are put into two-thirds glassful of water and then frequently and vigorously stirred around till dissolved. Of this, a teaspoonful is administered every fifteen minutes to half hour, according to the urgency of the condition.

Belladonna.—Bilious, lymphatic, plethoric constitutions; persons who are lively and entertaining when well, but violent and often delirious when sick. From the same causes as named under aconite, they come down with a chill and a high fever, with a kind of globular shotlike pulse, throbbing of the carotid arteries, red face, and a pounding headache. If this congestion to the head is not too severe, any noise, jar, motion, light or exertion will make the headache worse; if the congestion is severe, they become drowsy, their pupils are dilated, and they frequently wake from sleep with a startled cry and a fear of imaginary things, but in a minute or two promptly return to their somnolency. The skin is moist or sweaty under the cover, but dry where not covered.

I have used belladonna almost exclusively in the beginning of scarlet-fever of the true Sydenham variety, with excellent results. It is equally efficacious in any disease where the above syndrome is present. Dose: 5 drops of the tincture stirred into a half-glassful of water, and of this one teaspoonful every fifteen minutes to half hour till results; when the disease will usually pass over into a form in which calcium in some form is indicated. The writer prefers calcidin.

Gelsemium.—Children, young people, women, a nervous hysterical temperament. Complete relaxation and prostration of the whole muscular system, oftentimes with entire motor paralysis—at least trembling, weakness, confused muscular coordination—looks and acts of the intoxicated, besotted. Frequently seen in typhoid fever, but may occur in any disease. In those cases of neuralgia sometimes spoken of as cervical, where the pain commences in the cervical region and passes up over the head, or in which the anticipation of any unusual ordeal will cause a diarrhea, I have had good results from gelsemium. In cervical neuralgia, as stated above, I often

resort to the freezing method of Abrams, with the best results. As with all remedies, gelsemium should be exhibited in small doses and repeated to effect.

Veratrum.—Indications as given by Ellingwood are very good, indeed, and I can confirm every one of them.

Bryonia.—Indications as named by Ellingwood are correct, only I would add that all motions aggravate the pains, and that they seldom "stitch," unless there is a movement which rubs the dry and inflamed serous or synovial membranes against each other.

Rhus Tox.—The indications, given by Ellingwood are good, but I would add that the movements are exactly opposite, that is, movement will alleviate the pain of rhus tox. The patient gets "limbered up" by moving about. This is accounted for by the seat of pain being usually in the muscular tissue or tendons, instead of in the synovial membranes.

A. E. COLLYER.

Raton, N. M.

[If Doctor Collyer will substitute aconitine for aconite, atropine for belladonna, gelseminine for gelsemium, bryonin for bryonia, and so on down the line, we shall find ourselves pretty nearly in accord—and he'll be delighted with the results, or I miss my guess. Aside from the convenience of the active-principle granules and tablets, with the absence of the muss and discomfort attending the dispensing of liquids, these other advantages of the alkaloids must be considered:

Acuracy of dosage.

Uniform and unvarying potency.

Permanency—no evaporation of liquids, and slight variation with age resulting from heat, light or humidity.

STYPTICIN A "NARCOTIC" UNDER THE FEDERAL LAW

Here is a problem arising from the enforcement of the federal antinarcotic law.

I was called on the 'phone at night, after the ferry had stopped running, to attend a woman suffering from profuse menorrhagia. It was impossible, under the circumstances, to visit the patient at that hour. Accordingly, I telephoned a druggist in her town to put up the following prescription:

Stypticin.....grs. 8
Fl. ext. ergot.....ozs. 1 1-2
Elixir simp., q. s., ad.....ozs. 2

I told the druggist that I would send the original prescription as soon as possible. However, he absolutely refused to fill this, stating that the Harrison antinarcotic law

prohibited his doing so. I was certainly "up against it," since the patient was slowly bleeding to death. And yet I was powerless! The druggist told me he would not violate the law if everybody died. Please tell me if he had filled the prescription that night would he have violated the law?

J. H. O'NEILL.

Morgan City, La.

[Replying to the Doctor's letter, we at first answered "No" to his question, but on looking into the matter we find that stypticin is a derivative of opium, since chemically it is cotarnine hydrochloride, which is an oxidation product of narcotine—one of the little-used opium alkaloids; technically, therefore, it is an opium derivative and, as it comes under the purview of the law, the druggist was justified in refusing to fill the prescription. And yet, we cannot believe that if he had consented to do so, anyone, not even the most technical-minded official, would have tried to make him trouble.

But isn't it absurd to place a substance like stypticin, which, so far as we know, has never been used as a narcotic and really has no narcotic properties, under the rigid supervision of the federal law? This is another of the absurdities of this exceedingly useful Act. It needs revision to clear up these minor difficulties which are causing so much inconvenience and anxiety to the medical profession.—Ed.]

AN IDEA FOR UTILIZING "CLINICAL MEDICINE"

I have been a reader of your journal for the past year, and I like it very much; and here is an idea in which you may be interested.

For several months I have been in the habit of cutting out the various therapeutic suggestions your various correspondents report having found satisfactory in meeting certain indications. These clippings I index and file away, to be given a trial at some future time. It has occurred to me, however, that perhaps many of the remedies I should never have occasion to use, while some of those tried may prove disappointing; and, then, at the finish, after I have passed a lifetime in weeding out, all that I have thus laboriously learned will die with me. Moreover, I think that what I am doing every physician in active practice also is doing to a greater or less extent.

Now, if all this work were systematized and the collective results put in permanent

form, it would save every individual doctor going over the same ground. So, then, I venture to offer a suggestion; and my idea is this:

Enroll, say, one thousand subscribers, or as many more as are willing, in a joint work of investigation, to try out rational and definite suggestions, each of which is to meet a given indication. Let them report results to a central head who has the direction of the work. In this way, after a year or two, a great deal of ground can thus be covered. The information thus gained should be put in book form, then each of the collaborating physicians should receive a copy in case he has contributed to the results; otherwise, he ought gladly to buy the information the book may contain.

To put the idea in a concrete form: Recently I have been trying calcium sulphide in a case of dry tubercular pleurisy. It appears to me to have done good. Now, if at the request of CLINICAL MEDICINE a thousand clinicians put this drug to the test in their cases of tubercular pleurisy, as well as in tuberculous conditions generally, when eventually we have all the reports of these thousand men in, I shall come pretty near knowing whether in these conditions calcium sulphide actually is as good as it now seems to me to be. Then, should that particular drug prove helpful in such cases, that item, incorporated in a book accessible to everybody, will be worth something, backed, as it will be, by the findings of a thousand men scattered all over the country.

What do you think of the idea?

Pittsburgh, Pa.

H. P. KOHBERGER.

[We like your suggestion, doctor, probably because we have been talking something of the kind ourselves for many years. Such a collection of useful remedies should prove of the utmost value to every physician in the country. We will do all we can to "boost." To get things started, we invite every reader to submit a remedy, a suggestion, or a criticism. We will give all the space necessary for the presentation of the ideas of our readers, and we'll consider the book. Now what do the family say? Are you game? What will you do?—ED.]

THE CORTEX

Enlivening thought plays through this crown of
gray
As lightning through gray matter of the skies;
For this the cortex doth the life o'erlay—
An iridescent crown doth it comprise.

This is the earth crown mortals here may wear,
Enriched by reason, wit, and wisdom grave;
The soul's fond seat beyond the world's compare,
Entempled, beautiful, in vision's cave.

Here billowed on the cortex's swelling wave
Ambition lifts up with the welling tide;
Here nimble thoughts their fleeting feet well lave
And skip the landscape as with lambkin pride.

Here passion's storm doth concentrate with power
And flings its shafts down to the earth beneath;
Here peals of anger flash their fiery shower,
And sense and judgment cause its wrath to sheathe.

Ideas flash and glint as morning dew,
Wit sparkles as the sheen of silver spray,
Memory's pictures rise before our view,
While reason surges on her glorious way.

Love as the sweet perfume of flower in vase
Fills every cranny and each dipping fold,
Luxuriant as clinging vines may trace
Historic walls enriched by visions old.

And friendship, so akin, distills adown
Her fragrant sweets, the lips of joy may sip;
Gives fellowship which brings to man renown
And frames his name familiar on the lip.

Thus friends mingle as in some spacious hall;
The smile of face greets smile and dimpled cheek;
No living actor is beyond the call
Of this indweller whom the world may seek.

The buried past here rises into view,
The armies dead trample again the sod;
Tongues silent long orations here renew
While men and angels do the will of God.

Oh, man, what beauties rise to gild the sky,
What diadems bedeck thy noble brow,
What splendors fill thy mansion, none on high
Excels the glory into which you grow!

JAS. A. DEMOSS.

Thayer, Kans.

PIXLEY AND PELLAGRA

Shortly after the publication of Goldberger's remarkable paper, in which he attempted to show that pellagra is due fundamentally to protein starvation (CLINICAL MEDICINE, Dec., 1915, p. 1129), we received a letter from our old friend Dr. Charles S. Pixley, formerly of South Carolina, but now of California, in which he called attention to the fact that he had advanced this theory in a paper published in CLINICAL MEDICINE in June, 1913.

We veritably believe that Doctor Pixley is entitled to priority for this discovery. In the paper referred to, he unqualifiedly charges protein starvation with being the fundamental reason for the prevalence of pellagra in the South—and he gives a very interesting hypothesis to explain this belief. He says: "My course with all pellagra-patients is, to

try to reestablish hepatic and pancreatic function by means of protein in such amount as these inefficiently acting organs will bear, increasing the amount weekly." Under this treatment, he declares, "the rapidity with which the patient recovers is gratifying"; and he also says, "There is no drug-cure for pellagra, but it is the most easily cured disease of which I know." To back up this statement, he reports the treatment of 1100 pellagrins, of whom, so far as he was able to discover, only 5 had succumbed.

Look up Doctor Pixley's paper. It was, and is, interesting. We are strongly inclined to claim for him and for CLINICAL MEDICINE priority in presenting the starvation theory as a cause and the high-protein diet as a cure for pellagra.

HYSTERICAL RETENTION OF URINE

I was called at night to see a woman, 30 years of age, who gave the history of not being able to pass her urine for over twenty-four hours. The bladder was quite full and the lower abdomen bulged out with it. I knew that I should avoid passing a catheter in these cases if possible, and, as I had to go to my office to get a catheter, I tried hot packs over the vulva and hypogastrium; these failing, I tried "moral suasion"—had her get up and try to urinate, as she was quite healthy, and temperature and pulse were normal.

I knew if I went home to bed I would be yanked out later, so I decided, at last, to get that catheter at the office. Returning, I went at it, and with the husband holding a lamp, would you believe it, I couldn't hit the meatus! However, my catheter slipped into the vagina and a stream of urine shot out of the meatus urethrae *an inch anterior to where I had the catheter in the vagina*. I had the woman on a bedpan and when she was through there was a half gallon of urine in the vessel.

When I was washing up, at the kitchen sink, the husband said: "Doc, did you get that instrument into the bladder?"

"No," I said, "I slipped it into the vagina purposely, and made her believe it was in the bladder."

Of course one swallow does not make a summer, but I shall certainly try putting the catheter into the vagina again if I ever have another case of hysterical urine retention. Some good discoveries have been made by

blundering, and this may be a useful procedure in these cases.

R. HESLOP-PAYNE.

Tripp, So. Dak.

EMETINE HYDROCHLORIDE IN HEMATEMESIS

On January 23, 1916, in the afternoon, I was called to see a woman about 28 years of age, mother of two children. She and her husband were doing some work in a grocery store, when she was suddenly taken with a fainting spell. She was removed to her home, only a short distance away, and I was called. When I arrived at the house she had vomited and fainted away. The vomitus consisted of the fibrous part of an orange (the parts which encompass each section together with the tough center) and with it was blood mixed with other contents of the stomach. The vomited matter was in the toilet in the bath room and I could not estimate the amount of blood.

I administered, at once, a hypodermic of morphine, 1-4-grain, atropine, 1-150-grain, with strychnine nitrate, 1-40-grain. She revived and soon felt quite well.

On Monday there was no trouble, but Tuesday morning I was called early. She had vomited a quantity of blood and fainted. I found her very pale and almost, if not quite, pulseless. The blood was in a quart can and almost filled it. Some of it, perhaps, was water, although we were not allowing anything to be taken by the stomach.

I now injected emetine hydrochloride into the thigh, and in the evening gave a second injection of this alkaloid. The woman passed a good day Wednesday, but Thursday she fainted again. I was called and responded at once. A few minutes after I reached her bedside she had an action of bowels, the stool being nothing but a mass of foul-smelling clotted blood. I immediately injected emetine hydrochloride. In half an hour she threw up about four ounces of the same kind of blood from the stomach. After this no more bleeding occurred; however, I wanted to be sure the hemorrhage would not recur, so used the emetine again in the evening. No bleeding the next day, but I used the emetine in the evening; also, the next day, Saturday, another final dose of the alkaloid. This was on January 29.

All this time I was keeping her quiet. Had ice-bag over stomach for two days, securing rest at night by means of hypoder-

mics of morphine. We could not utilize the stomach for food, so gave nutrient enemata.

February 7, the nurse endeavored to raise her head enough to give liquid food, but she became faint, and extremities cold. They had to wait half an hour before she could take the nourishment.

She had at one time considerable elevation of temperature, was pale as a corpse; finger nails white, and she became jaundiced. I gave calomel followed by a solution of magnesium citrate. Put her on triple arsenates with nuclein, pepto-mangan (Gude), and plenty of tablets of nuclein. February 26, one month from first call, she was lifted into an easy chair. She cannot stand up yet because her "knees are too shaky," as she puts it. We are well pleased that she is recovering so nicely.

A. I. MITCHELL.

Seattle, Washington.

[In the February number of CLINICAL MEDICINE (p. 171), we printed an article by Doctor Mitchell, reporting his experience with emetine, which he used to check a terrific epistaxis occurring in his wife. The loss of blood was so great that the doctor was greatly perturbed and fearful as to the result, and naturally very thankful that he happened to have a small supply of emetine hydrochloride ready for this emergency.

In the letter accompanying the article which we are printing herewith the doctor says: "I do not send the enclosed case-history with the expectation that you will give it space, but rather to show that while 'one swallow does not make a summer,' two will come much nearer doing so. The more frequent the occasions on which a remedy scores, the greater our confidence in its virtue. Also, it shows how providential it was that I, who a short time ago first came to know through CLINICAL MEDICINE of this application of emetine hydrochloride, and who had secured a tube of tablets for use in pyorrhea, should so soon find it, as I fully believe, the means of saving my own wife's life, and then, through the same means, be able to handle successfully the case described in the paper which I am enclosing."—Ed.]

DOCTOR LYDSTON COMMENTS

I note in your last issue a statement regarding the status of my proceedings against the trustees of the American Medical Association relative to their legal standing as officials. This statement is in the main cor-

rect. I wish to point out, however, that the Supreme Court refused to grant a writ of *certiorari* because the Appellate Court's decision was good law. This decision was: first, that the American Medical Association must hold its elections in the state of Illinois; second, that every member should have a ballot; third, that because of these facts the State's Attorney must serve *quo warranto* writs upon the trustees.

There will be no further trial of the case. The writs will be served *pro forma*. The trustees will be required to answer. They will be unable to answer because the merits of the case already have been decided. Writs of ouster will be asked for, and a new election be ordered for trustees. It would appear that the American Medical Association is so much "interested" in the results of my suit that technicalities at present writing cut no figure, save in the matter of formal legal delays. Sophisticated delays, quibbles, evasion and deceit will avail as little for the defense as they will annoy me. The fate of the association henceforth is in the hands of the members, where it properly belongs. It is for them to make proper use of their power.

As for myself, my political activities in the American Medical Association have at last ended in the accomplishment of more than I ever dreamed of when I first began my battle for membership rights. I have no political ambitions, and my only hope is that the membership will use and never abuse the ballot, nor permit a self-constituted oligarchy to dominate the association without check or hindrance or regard for the rights of the rank or file.

G. FRANK LYDSTON.

Chicago, Ill.

FOR THE REMOVAL OF GUNPOWDER STAINS

Some years ago I was called to see a small white boy who had filled an ink bottle with gunpowder, put a coal of fire on it, and blew it to see it "shoot." The result was that the bottle exploded, and the youngster was fearfully burned with the powder on the face and neck.

I tried washing the burn with different things, but with no success. Then I tried opening the places in the skin where the grains of powder had entered and endeavored to pick them out, but the stains remained almost as bad as before. I was just about ready to give up, when an old negro woman, a nurse in the family, said she could get all

the powder out before the next day. I told her that it was up to her, and she went off toward the pantry. (I followed, because I wanted to know what she was going to do.) She then told me she was going to get some Irish potatoes, wash them thoroughly, grate them on an ordinary potato grater, and apply the gratings directly to the part burned, applying a cloth covering and allowing the dressing to remain about eighteen hours. Then, if any place had not been reached by the grated potato, it would be reapplied.

I have used this simple remedy frequently and have never had to use the second application, for if it is pressed down on the part well, it will positively remove every particle of the gunpowder as well as the stain in the flesh. The dressing should be about the thickness of an ordinary poultice, and if the patient is burned in the face, see that the potato-pulp is applied with care around the eyelids, since they are usually badly burned.

Several years ago, while at one of our southern resorts, I called at the office of a doctor friend, on July 5, and found him with a patient on the table, the nurse busy handing him different instruments with which he was trying to pick the particles of powder from the face of a little white boy who had celebrated "the glorious 4th" with a toy cannon. It was very warm, and the doctor had beads of sweat pouring down his face. When he asked me if I had ever had the misfortune to get such a case, I told him yes, that I had no trouble at all with them, and that if he would allow me to suggest a treatment, I was satisfied that his patient would be all right the next day. He was glad to hear my suggestion, but when I told him what the remedy was, he grew doubtful at once and questioned its virtue. However, he promised to try it; and it was finally agreed that if it failed I was to pay for the dinner next day at the hotel. Next day, about 6 o'clock, we visited the case. The boy had taken off the potato poultice at 4 o'clock (when we failed to come, as agreed) and was out in the front yard, playing baseball with other boys, and none the worse for the injury except that his face was slightly swollen. The doctor saw him playing and said, "The dinner is on me."

W. W. MATTHEWS.

Glynn, La.

WHOOPIING-COUGH—A COMMENT

In treating whooping-cough, it has been my custom for many years to direct that the

illuminating-gas from one unlighted burner be turned on in a room until the odor of the gas is strongly perceptible, after which the patient is carried in and allowed to breathe this gas-laden air for half an hour or even longer. This procedure may be repeated whenever the paroxysms of coughing or dyspnea arise. I hardly need mention the well-known fact that children raised near a gas-plant are remarkably free from whooping cough.

The gas is directly germicidal to the microorganism producing pertussis. I have repeatedly resorted to this procedure when called to cases given up by other physicians and had the satisfaction of seeing my patients improve from the very start.

I have mentioned this treatment to many physicians, at different times, always saying that I instruct parents and nurses to try this method whenever they had whooping-cough to deal with, but, strange to relate, in every instance I have been criticized for it, not one approving word have I ever heard. "What do you do that for?", they will ask. "What do you get out of this?" "You are hurting the business." "You are a — fool!"

I cannot believe, of course, that all doctors feel that way. If so, however, they would remind one of the old Spanish doctor who said: "It were better that all the men in Valladolid should die than that my pet theory of practice be discredited."

To me, the relief of suffering, the saving, even, of one precious life, is worth more than all the money you could pile up.

To help, is our mission.

Write this message abroad across the heavens,
Extend it mile upon mile.

'Tis man's humanity to man
That makes the millions smile.

C. S. COPE.

Detroit, Mich.

[The treatment advised by Doctor Cope should be used with caution, remembering that illuminating gas ("water gas" commonly used) consists largely of carbon monoxide, which is a deadly poison, destroying the red blood cells. There is no antidote. Too much of the gas at a dose, or too many doses, may have a disastrous effect. Therefore "handle with care."

After all, why not calcium sulphide? I there a remedy that acts more nicely than this in the average case of pertussis? If you are prejudiced against it, you might try silver iodide, a remedy that has been warmly praised by many competent practitioners. Likewise, emetine has recently been employed

in whooping-cough by Milwaukee physicians, and with really wonderful results so we are informed. But calcium sulphide is my stand-by; it is safe as well as efficient. —Ed.]

THE PROCTOLOGIST AND GASTRO-ENTEROLOGIST

Dr. Rollin H. Barnes writes us that *The American Journal of Gastro-Enterology* has combined with *The Proctologist* and will be published (beginning with the March number, first of year) as *The Proctologist and Gastroenterologist*, from St. Louis. Dr. Lewis Brinton, Philadelphia, and Dr. Anthony Bassler, New York, will have editorial charge of Gastroenterology; Dr. A. L. Benedict, editor of Dietetics; while Dr. Rollin H. Barnes, St. Louis, will be managing editor and publisher.

A FEW COMMENTS ON PAPERS IN CLINICAL MEDICINE

One of your subscribers in Ohio, in criticizing Doctor Jones on his electrical treatment, says that our critics really are our best friends. I agree with him, and, in fact, I was on the point of saying the same thing, inasmuch as Doctor Jones was pressing down so heavily on some of us who had used electricity for quite a while, and with rather unsatisfactory results. He says, we get a little family-machine, and then think we have all the electricity there is. I thought I had a very fine plate in a neat case, and used the galvanic and faradic forms in all of their variations—and it seems that these are all that Doctor Jones has used with any degree of success. He did speak of the static "breeze." We use sea-breezes instead, which are excellent.

There are cases which galvanism will benefit, if the current is strong enough to change an old ulcer to an actual burn. But you can shake the life out of a man who has malaria, and he will still have a chill from which there is no reaction either as to fever or even animal-heat. But the doctor failed to tell us how much faradic current he used. While he used the interrupted current, he never interrupted his remarks with an explanation. He used the galvanic current, but failed to say how many milliamperes were used in any case. I suppose he used it as alkaloids are used, to "dose enough;" but some patients will complain if you use only seven milliamperes, while others can stand forty or more.

I also have a little kick on the doctor from Ohio. He thinks we have twice too many doctors. I also think so, and I have fallen on a plan to regulate this. Now, doctor, let's each of us decide to discourage some young fellow who is just starting out, and get him to quit the race. By these means, we can knock out half of the competition; and this will be easy work if we can catch the youngster when he gets a patient from one of our best families and expects to show just what he can do, and this patient, by chance, happens to die. Just go to that young chap and tell him that that is the way the whole darned thing will go all through life; that he will be called out on the dampest, coldest, meanest nights and will then have to cut and shoot to get pay for it, and then, after he has treated all classes of patients for years, including lawyers, doctors, judges, railroad officials, and all the best people of the country, some little black pug-nosed negro will decide that he doesn't know anything, turn him off and get another doctor to treat his wife. That upstart will then throw down his medicine case and quit the field. But be sure you do this on his first case, for, if you wait, he will get so he doesn't give a darn who dies.

As to surgery, that is progressing nicely. Everybody and his brother is having his appendix removed, because the carpenter who made it did not know it was useless and always rotted off if left long enough. We had been neglecting this important organ, because we thought the builder knew what was needed; yet, while in our little thirty-five years work we can't recall even half a dozen patients who died from this, that or t'other bowel obstruction, in nearly every paper we pick up we see where someone has died from "shock" or something else after a successful (?) operation for the removal of the useless (?) appendix. I say, while all this is true, yet we have lost thousands of dollars by neglecting this very important point.

Another trouble, which I already have mentioned in other papers, is the treatment of fractures. We used to place the bone parts, that were broken, in apposition and bind them up with splints, then let them remain for six weeks in this position. Now, although the result was nearly always a proper union, just think what might have been and the great amount of money we have lost by not making a compound fracture of the simple ones, thereby producing blood poisoning, and by this foolish oversight losing much good practice in curing it. Also, by our negligence we have, no doubt, caused many poor under-

takers to miss many a profitable job. True, we did not then know so much about the new antiseptics, but used such common stuff as carbolic acid, bichloride of mercury, iodine, and such-like old-fogy makeshifts; thinking that, by mixing too many articles together—as in listerine, which contains a lot and then some—one might destroy the efficacy of the others, we just took ours straight. Surgery is all right and we are glad to see it advancing. Also, as we know, there is a lot more money in it.

We also gave quinine in malaria, without fear of the dire results we hear of now. We did not get any bad effects, but we did knock the ague out, instead of allowing the disease to run a long-continued course. Another example of our ignorance as to how to make easy money.

Verily, when the old family doctor passes, then, and not till then, will the medical profession begin to make money. One will trim the patient's nails and another his corns; one look after his rectum, others at his appendix, his gall-bladder, his stomach, his skin, bladder, prostate gland, urethra, brain, heart, throat, lungs, eyes, ears, liver, spleen pancreas and so along the anatomical index. Then the anesthetist, obstetrician, gynecologist, the general surgeon, diagnostician, and nerve-specialist will each get his chance—and, by the way, let us hope and pray that the latter will remove as much of the nerves as possible, so as to cut short a lot of these long-drawn-out papers.

We have not mentioned the intestinal tract, but Doctor Abbott, with his saline laxative and intestinal antiseptics will attend to that all right. But right here let me say that, while I like Doctor Gray's papers very much and have gained lots of information from them, I certainly think he uses too much podophyllin and calomel, or used to, at least. However, I see he uses smaller doses of late.

As I have before stated—and we all know—the human system is nothing but a fine machine. The stomach is the firebox, where we place all the fuel. The bowels are the ash box. The kidneys are the condensers. The heart is the pump, which distributes the fluid for making steam. The brain is a powerful governor that regulates the running of the whole machine. But the liver is only the lubricator that furnishes the wherewithal to make the machine run smoothly and nicely, if kept in good condition. Now, would it be good common sense for the engineer, when he finds his machine all clogged and closed up

(as in constipation), to flood the whole works with lubricant (or bile)? Or, would it not be better first to clean out the machinery (you see where Brother Abbott comes in) with saline laxative or something on that order? Then only the normal amount of lubricant would be required. Consequently, only small, stimulating (not heavy purgative) doses of the laxative are required. Besides, when a patient is sick, his liver is also sick, and we should no more try to make the liver do three or four days' work in one day, than we would require a man to do the same.

Mercury can be used for several purposes: as a tonic, as a stimulant, as an irritant, and as a sedative. As a tonic, I prefer to use the bichloride, protoiodide, and similar salts, in small doses. As a stimulant, I give 1-10 to 1 grain of calomel, repeated hourly to effect. As an irritant (which I seldom use) 3 grains of calomel every three hours until 9 to 15 grains have been taken. As a sedative, 10 to 20 grains at a dose.

Who has not had trouble getting the bowels to act at all, even after large doses? And who has not seen the bowels checked for two or three days after large doses of calomel have been taken? The liver must rest, as a man would be forced to do.

For health, want of practice, and other reasons, I have been forced to work in several sections of the country, from the Kentucky line to the Gulf of Mexico. Several years of this time was spent in the worst part of the Mississippi delta, right on the Gulf Coast, not so far north from Doctor Gray's place of work. I am now in the rich prairie section of Mississippi, eastern part of state—so, have gone up one side and down the other of a section a hundred miles long. Therefore, if I should claim to have treated several cases of malaria of every form, you may not be surprised. And one thing I have learned is, that the liver is the liver, north or south, and it must be treated with respect almost the same everywhere, or it will not do its work properly.

Just a few words more. The doctor in Ohio thinks as I do, that we should tell what we know, so as to give others information. I agree with him fully, and I will say first, for his information, that in my rounds I have naturally run up against more than one medical board, and if he has not done the same it is rougher sailing than he may think. So, then, he won't kick on me on this line.

Now, for what I really know—and it is no guesswork. I know that, when I treated malarial bloody urine with quinine, I had less

trouble than I did without it. I know that at one time another doctor and I each had a patient in the same house. They were brothers, taken with this trouble at the same time. We decided that, if quinine was dangerous, we would not use it. But, as both had become unconscious, one doctor decided to slip in a little quinine, and he gave his patient 4 grains every two hours—30 to 40 grains. This patient recovered, but the other—who received none—died. I know that I treated a case that began with the bloody urine for seven weeks—being a continued form. I gave this 14-year-old girl 30 grains of quinine the first day; and repeated it the next day. The urine cleared up, but on the first of each week the blood returned as bad as before. Each time I gave quinine, it cleared up. After the seventh week, she began to improve, and thereafter had no more trouble. If quinine causes the trouble, why should it clear up after giving it? Or, why should it wait just seven days before returning?

These are only two instances. There were many others. Now, I assert that I never lost a thoroughly cinchonized patient from this trouble. I also know that I have seen several who died for want of quinine, while I don't know that I ever saw one die from its use. I also know that quinine is good in almost every kind of fever. Even in typhoid fever, in which enough is given to keep the skin moist, I do not fear it.

I make these remarks, because called for in the January issue.

There are also a few other things that I positively know. Pure beechwood-creosote is the best cough-medicine I have ever used, given in half-drop doses in good thick sugar syrup or syrup of tolu, say, 32 drops; syrup of tolu, 8 ounces. Dose: 1 teaspoonful every three hours, and just a little at each coughing—"spell." This in connection with fresh air, plenty of light, and nourishing food; if any medicine will cure consumption, this will do it. Don't say no—just try it and report. It will also cure specific urethritis alone. Don't try to stop the discharge, for, when a dog is running from you, he can't hurt you very badly. Just continue the medicine and report results.

I also know that 30 drops of pure carbolic acid with 2 ounces of potassium chlorate in 8 ounces of water has cured 90 per cent of all kinds of sore throat; with me nothing else. Try it. [Teaspoonful doses, Doctor?—Ed.]

Now I am glad to close, but, before doing so, I want to say that the druggists are trying

hard to have laws passed preventing physicians from prescribing and filling their own prescriptions. Patients would frequently have to go from five to twenty miles to get medicine, no matter how bad the case. I think it is the most ungrateful and most foolish proposition I ever heard of. If a physician has sense enough to write out what he wants, and the amounts, he certainly could put them in a bottle or box. If he can tell the druggist what directions to write, he certainly can write them himself.

I would be delighted to have a good, honest druggist to fill my prescriptions. But all I have seen (and they filled all of them for several years) will not only refill without orders, but will actually prescribe their own medicines for my patients. I think I have the plan to regulate this, and shall propose it, if this goes through, perhaps in my next letter.

"A FRIEND."

Mississippi.

[We are thankful to the doctor for assigning the alimentary canal to us. With that portion of the human anatomy to look after we can get along very nicely, thank you!]

With calomel prices climbing up and up, we are convinced that many more physicians, even our good friends down in the Mississippi bottoms, will soon be converted to "small doses frequently repeated." It is wonderful what splendid results can be obtained with minute quantities when the mercurial is used carefully and followed with the laxative saline. However, the time is an opportune one to begin the study of other cathartic drugs. For instance, why not use podophyllin? Eclectics call it the "vegetable calomel," and it is a splendid stimulant of liver-action—without being over-stimulant.

When our southern brethren get thoroughly saturated with our ideas regarding intestinal antiseptics, they will not need to saturate their patients with quinine quite as often. The latter is a great remedy, an indispensable one in malaria, but the man who looks after the condition of the *primæ viæ* very carefully, finds that he can get along with less of it than he has heretofore been accustomed to use—and that's another saving. And speaking of intestinal antiseptics, I suspect that the high prices of drugs will serve to interest more of the profession in the Bulgarian bacillus tablets.

The doctor's criticisms are all right. I hope he will follow with another paper, giving us some more of his therapeutic "kinks" as well as his solution of the prescription problem, as promised.—Ed.]

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

WHEN one is confined to the house with the grip, as I have been for the past two weeks, one is likely to get into a reminiscent frame of mind, and, I might add, a critical frame of mind, also.

I do not feel exactly like writing a medical article today. Instead, I will relate a few experiences that I have had since I began to practice medicine, that will show a side of human nature that is altogether too common.

When I was medical superintendent of a well-known sanatorium, some fifteen years ago, before the Harrison law went into effect, I had as a patient a lady whom I suspected of being a cocaine- or some other drug-fiend. She denied that she was addicted to any drug. However, not convinced, I assigned her a special nurse, put her in different clothes, and placed her in another room, one that contained none of her clothes or baggage.

On the third day, following this change, a box about the size of a seidlitz-powder box, done up in blue druggist's wrapping-paper and containing powders of white color came to her by mail from Chicago. In the presence of the lady's husband, I opened the box and then had the powders analyzed in our laboratory. The chemist found them to be cocaine hydrochloride. Accompanied by the husband, I took the box of cocaine powders to the lady's room and accused her of taking this drug. She saw it was useless to deny the fact any longer, but flew into a rage and began to abuse her husband as well as me shamefully, declaring that she would take cocaine as long as she lived, in spite of us.

I told her that she would take no more cocaine while she remained at the sanatorium, and, furthermore, that, with her husband's consent, she would remain at the sanatorium in charge of a special nurse until she was cured. The woman recovered completely, has not relapsed, and is today one of the most grateful and appreciative ex-patients.

The nub of this story is this. Desiring to know, if possible, who had sent that

cocaine, I set my "Doctor Furnivall" and "Sherlock Holmes" mind to work, and eventually located the Chicago druggist who sold the drug to this woman. The druggist admitted that he had sent her cocaine to New York, San Francisco, and to many other cities in the United States. He also admitted knowing that she was being treated by me, and probably for the cocaine-habit. When I asked him why he sent cocaine to a woman whom he knew to be under treatment for this pernicious habit, he shrugged his shoulders and said, "Oh, well, if I hadn't sold it to her, she would have bought it somewhere else; and I might as well have the money as the other fellow."

I said: "Then your interest in this case is merely in the little profit you make on the cocaine; you have no consideration for the poor victim nor for her family—you think only of the little money you make out of it?"

"Well, that's about the size of it," he said; "some other druggist would get the money if I didn't."

In the town where the sanatorium is located, there were three drugstores, and whenever I had a patient badly addicted to the use of alcohol, morphine, cocaine, chloral or other drug I would notify each druggist not to sell anyone of these drugs, respectively, to the particular patient under treatment. But my request was never heeded, so far as I know. In several instances, I was positive that my patient secured his drug at one or other of the drugstores in the town, and when I took the matter up with the proprietor I would receive a reply similar to that given me by the Chicago druggist—"If I didn't sell it the other fellow would."

Many times I have had physicians furnish drugs to my patients, well knowing that they were under treatment, and that just for the paltry dollar or so they would make. The Harrison law has done some good, but, unfortunately, it hasn't changed human nature much.

Not long ago, I had a patient under treatment for neuritis, who was also addicted to

morphine. I got her off the morphine, relieved her neuritis, and altogether she was doing very well, save that she was nervous and irritable—as was bound to be the case under the circumstances—and suffered considerably from sleeplessness; however, her neuritis was steadily growing less. One day the woman received a box from a big department store in Chicago. From something she said, I became suspicious that this box contained a narcotic or hypnotic drug. I opened the box, and found in it two pint-bottles of somnos! Now, somnos doesn't come under the Harrison law, but no one can convince me that it is right or just to place on public sale a drug like somnos. I suppose anyone could buy bromidia by the pound in a department store too.

I maintain it is wrong in principle to have such drugs on sale where anyone can purchase them without restriction. Why are they on sale? Simply to make money for the manufacturers. The welfare of the consumer is of no importance to the manufacturer, what he wants is, the *money*. If his product is a habit-forming preparation, all the better for him, so long as he can keep out of the penitentiary.

The whisky traffic is another example of this greed for money. It is immaterial to the whisky manufacturer and the vender how much suffering, crime, and poverty result from the sale of the stuff. The only question with them is, how much money they can make out of their business.

Just now this country is witnessing a most shameful exhibition of greed on the part of certain manufacturers furnishing munitions of war to European nations engaged in murdering each other. I boldly affirm that, morally, a man who will furnish powder and shells and other agents of destruction whether to one person or to a nation as a whole, for the purpose of killing other human beings, is as guilty of murder as if he himself did the killing. And for what are we in this murderous trade? Money! These manufacturers of munitions of war hope deep down in their hearts, that this frightsome war will continue for years longer, so that they can pile up more money. And our government stands for this gruesome business! While a few humanely thinking people are trying to get some food to the starving Poles, England and Germany, between them keep them from getting it. And we, the people of the United States, stand for it, all the while allowing a few

conscienceless manufacturers to prolong the slaughtering by furnishing material with which to blow human beings to pieces. And all this shameful, outrageous business, and the war itself, is prompted and carried on because of avarice and greed. There is no justification whatsoever for it.

Europe will suffer for generations for this, and so will we. A nation can not last as a money-making mob; it can not concentrate its soul upon money or territory alone, and prosper. No man, no nation actuated by greed is great. Ruskin, over fifty years ago, saw England's weakness, in fact that of all Europe, and in a public lecture delivered in Manchester on December 6, 1864, expressed himself as follows:

"A great nation does not spend its entire national wits for a couple of months in weighing evidence of a single ruffian's having done a single murder, and for a couple of years see its own children murder each other by their thousands and tens of thousands a day, considering only what the effect is likely to be on the price of cotton, and caring nowise to determine which side of battle is in the wrong. . . . And large landed estates bought by men who have made their money by going with armed steamers up and down the China Seas, selling opium at the cannon's mouth, and altering, for the benefit of the foreign nation, the common highwayman's demand of "your money *or* your life," into that of "your money *and* your life." . . . A great nation does not mock Heaven and its Powers by pretending belief in a revelation which asserts the love of money to be the root of *all* evil, and declaring at the same time that it is actuated, and intends to be actuated, in all chief national deeds and measures by no other love.

"It is one very awful form of the operation of wealth in Europe that it is entirely capitalists' wealth that supports unjust wars. Just wars do not need so much money to support them, for, most of the men who wage such, wage them gratis; but, for an unjust war, men's bodies and souls have both to be bought, and the best tools of war for them besides, which makes such war costly to the maximum: not to speak of the cost of base fear and angry suspicion between nations which have not grace nor honesty enough in all their multitudes to buy an hour's peace of mind with; as, at present, France and England, purchasing of each other ten-millions' sterling worth of consternation annually (a remarkably light

crop, half thorns and half aspen-leaves, sown, reaped, and granaried, by the 'science' of the modern political economist, teaching covetousness, instead of truth). And, all unjust war being supportable, if not by pillage of the enemy, only by loans from capitalists, these loans are repaid by subsequent taxation of the people, who appear to have no will in the matter, the capitalists' will being the primary root of the war. But, its real root is the covetousness of the whole nation, rendering it incapable of faith, frankness or justice, and bringing about, therefore, in due time, his own separate loss and punishment to each person.

"France and England literally buy panic of each other; they pay, each of them, for ten thousand thousand pounds' worth of terror a year. Now suppose, instead of buying these ten-millions' worth of panic annually, they made up their minds to be at peace with each other and buy ten-millions' worth of knowledge annually; and that each nation spent its ten thousand pounds a year in founding royal libraries, royal art-galleries, royal museums, royal gardens, and places of rest. Might it not be better, somewhat, for both French and English?"

True, it would, Mr. Ruskin, but human nature hasn't changed any since you wrote those words fifty years ago. Indeed, you might think, were you alive today and witnessed the present war, that mankind is today less civilized than when your countrymen were trying to conquer France, as they are now endeavoring to wipe Germany off the map. And now, as then, actuated principally by greed.

You, my reader, may think I am a pacifist. Yes, I am, but you can bet I am for preparedness to the limit, because we are surrounded by nations made up of human beings that are as greedy and bloodthirsty as tigers. And, until human nature is different from what it is, and has been since the beginning of time, the individual as well as the nation must be prepared to protect himself and itself from attack.

I hold that what the community today most lacks is, the individual instance of virtue of the man of whom the world may say, with Shakespeare: "This is a man"—a noble, virile type, the living exemplar of that high conscience, that stainless sense of honor and incorruptible love of truth which alone proclaims the Creator's image.

The inclination to temporize, to make truce

with private convictions lures us from a clearer insight into the true relation of individual action to the general weal. Among certain classes, there is an actual fear of opprobrium attached to overscrupulousness in daily conduct. Not to "succeed" is almost regarded as a reproach, and it is not uncommon, even, to hear cases of successful embezzlement, for example, admiringly spoken of as "smart." Nor is this encomium confined to the ignorant and unprincipled; men of intelligence and standing in the community are all too ready to condone a moral obliquity in others which they would vehemently disclaim for themselves.

In every walk of life, we need men of staunch courage, God-fearing (or, better, God-loving) men, of strong personality, to stem the tide of shuffling weakness and to give honesty and tone to politics, trade, and society.

Everyone is familiar with Mathew Arnold's phrase of "the Power that makes for righteousness." This is the power which makes for progress. There is no abstract righteousness; but righteousness is that which conserves and lifts and gives light. Unrighteousness is that which hurts and kills individuals, cities, nations. Greed and falsehood disintegrate and break down the tissues of society. Truth binds men together and reinforces the social texture. Honesty builds up, but dishonesty subtracts; therefore, the dishonest can not endure. Cruelty destroys, kindness saves. Impurity is a poison sapping life, but pure hearts and pure homes create new vigor.

Every effort of righteousness is a movement of progress. Unrighteousness is a form of suicide. The eternal forces wage war to undermine and bring to death the things and the men who bring no positive contribution toward the momentum of civilization. Such, then, is the inexorable rule of existence; beneficent, too, since it makes death a gateway to higher life and gives every creature a new value. The truth is, the world is full of dissatisfaction with every present-day standard of progress. There is no civilized nation on earth. There is no modern city of God, yet. There is no organized form of religion, good enough as it is. Our satirists of today castigate the whole race of man much as in the days of Juvenal. The prophets of Israel still speak their rebukes to us. The cry is for some higher types of man, some aristocrats or "supermen" fit to create a nobler society.

Among the Books

FALTA: "DUCTLESS-GLAND DISEASES"

The Ductless Glandular Diseases. By Wilhelm Falta, M. D., Vienna. Translated and Edited by Milton K. Meyers, M. D.; with a Foreword by Archibald E. Garrod, M. D. With 101 illustrations. Philadelphia: P. Blakiston's Son & Co. 1915. Price \$7.00.

The translator and editor has furnished us not merely a faithful rendering of the German text of this important book, but also a rounding-out of the subject, by the consideration of recent American and English views on the subject. To this end, he has consulted a wealth of material, comprising hundreds of references and numerous original articles. The American and English views referred to are put into the form of an addendum at the end of each chapter, so as not to interfere with the continuity of the translation. In adding the new matter, care is taken not to confuse the clearcut scheme of Falta, who so admirably separates the various groups of ductless-gland diseases by well-defined lines.

As to the translation itself, no fault can be found with it. Occasionally, when the editor could think of no corresponding English expression, he gives an approximate meaning, with the German word in brackets. It is especially to the ductless glands with more or less well-defined internal secretions (endocrine organs), that the attention is directed, so that bodies such as the spleen, diseases of which are described in relation to those of the hemopoietic system and the carotid body, are not considered here.

CABOT: PHYSICAL DIAGNOSIS

Physical Diagnosis. By Richard C. Cabot, M. D. Sixth edition, revised and enlarged. With 6 plates and 268 figures in the text. New York: William Wood & Co. 1915. Price \$3.25.

Doctor Cabot is probably the best teacher of physical diagnosis in the country. He is, in addition, a big man, who includes his work as a whole includes its parts. He, himself, is much greater than any part of his work, or the whole of it; and he stamps all his work

with his own greatness. It stands out all over his "Diagnosis," which now is in its sixth edition. One is impressed with the unaffected simplicity and breadth of the subject as Cabot presents it. One also wonders, as one always does when a master expounds a subject, whether it really can be as simple as that, hardly realizing that it is the simplicity of fundamentals and elementals.

When, several years ago, Oswald Vierordt, issued for Americans an English translation of his "Medical Diagnosis," we predicted that it would sweep all other textbooks from the American field, because it dealt, elementally, with principles of diagnosis, instead of with complex details. Strange to say, that very quality defeated its use in our American schools. The American student and physician were not yet educated to that sort of teaching. But Cabot, by his personal force, has achieved that which Vierordt *in absentia* could not do—he has swung the American student around to the study of diagnosis through broad, elemental principles; and the popularity of his own book is witness to the thoroughness of his achievement. Cabot is the Vierordt of the United States.

GRIFFITH: "CARE OF THE BABY"

The Care of the Baby: A Manual for Mothers and Nurses. By J. P. Crozier Griffith, M. D. Sixth edition, thoroughly revised. Philadelphia and London: The W. B. Saunders Company. 1915. Price \$1.50.

When we reviewed the preceding edition of Doctor Griffith's excellent manual, we predicted that it would not be long before it would be exhausted and another issue called for; but we confess we hardly expected so quick a verification of this prediction. Not, however, that we are a bit surprised. We know of no man in the United States possessed of a more intimate and intelligent knowledge of the baby, from the standpoint of its health and care, or who has a happier way of imparting that knowledge, in plain, understandable language, to the mother and the nurse; so that, as a matter of fact, the name of Crozier Griffith has become classically identified with this important subject.

The book very properly begins with the time "before the baby comes," and then takes us through every phase of infant-life and care of the baby, giving the most sensible and helpful directions concerning its feeding, toilet, clothes, sleep, training, quarters, and, in short, every conceivable aspect of baby-life. There is a chapter on dietary—not a detailed affair, but just the basic principles of the subject, for fundamental guidance—and a section on the sick baby, in which instructions are given for the management of the commoner minor ailments that affect the infant. Everything in the book is scientific and up to date, without being ultra scientific or impracticable. We can think of no better or safer guide for the mother or the nurse, and the family doctor should not fail to recommend it.

SHAMBERG: "SKIN DISEASES AND ERUPTIONS"

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Shamberg, A. B., M. D. Third edition, thoroughly revised. Fully illustrated. Philadelphia and London: W. B. Saunders & Co. 1915. Price \$3.00.

In former times, the study of dermatology was limited to those pathologic conditions that began and ended in the skin. Of late years, however, our conception of the subject has broadened, so as to embrace a consideration of all morbid conditions manifesting themselves, either wholly or in part, in the skin; this, naturally, taking in all diseases characterized by cutaneous manifestations.

Thus the function of the dermatologist is given greater dignity as well as greater import. Under this conception of dermatology, the specialist in skin diseases not only must be able to diagnose the ordinary dermatoses, but capable of differentiating the eruptions of the various febrile ailments, as also the cutaneous signs of constitutional diseases, such as tuberculosis and syphilis.

Doctor Shamberg devotes a special chapter to the treatment of the eruptive fevers, giving a great deal more space to their diagnosis than is usually accorded them in textbooks on skin diseases. This he believes to be justified by their importance; and herein we heartily agree with him. Besides the disorders generally classed as exanthemata, there are included in this chapter the incidental eruptions attending such diseases as, for instance, typhoid fever, rheumatic fever, malaria, meningitis.

The entire book is practical and to the point. One could have wished, however, that the illustrations had been in colors, since color plays so large a part in the recognition of skin lesions. It must be admitted, nevertheless, that even without the coloring the plates afford an excellent representation of the lesions they are designed to illustrate.

KRAUSE: "HISTOLOGY"

A Textbook of Histology. By Rudolph Krause. Translated from the original manuscript. With 36 illustrations. New York: The Rebman Company. 1915. Price \$2.50.

Although we are not quite clear on the matter and the introduction does not shed any definite light upon it, we take it that this volume is a sort of supplement to the previous publication, made by the Rebman Company, from the pen of Krause, under the title of "Normal Histology," which we had the pleasure of reviewing some two years ago. Indeed, now we come to examine a little more closely, there is indirect testimony to this fact in the introduction, for, we are told that the plates and figures quoted in this book refer to those contained in "Normal Histology."

Professor Krause, (of Berlin, Germany), justly attaches great importance to the matter of drawing the specimens from the microscope. And this book, like its predecessor, excels in its illustrations, which, for all practical purposes, are fully equal to the actual slide. Indeed, many of them represent preparations such as the average student will never make or see in the original. The beautiful series of drawings will in themselves, serve the reader as an excellent course in histology. It really is marvelous that so splendid a work of science and art can be put in our hands at relatively so low a cost; and The Rebman Company has earned our gratitude for achieving this wonderwork.

JELIFFE AND WHITE: "NEUROLOGY AND PSYCHIATRY"

Diseases of the Nervous System: A Textbook of Neurology and Psychiatry. By Smith Ely Jelliffe, M. D., Ph. D.; and William A. White, M. D. With 331 engravings and 11 plates. Philadelphia and New York: Lea & Febiger. 1915. Price \$6.00.

There is really not much to be said of this book that has not already been said, many times over, in regard to other books on neurology. Indeed, we could very earnestly wish that there might be more to say. That,

however, is not altogether the fault of the authors, Doctors Jelliffe and White, but, rather, is owing to the disappointingly slow progress made in neurology, as compared with other departments of medical science. In every other branch of medicine the tendency during the last fifty years has been to reduce the concepts of disease to the fewest possible number of the least common denominators, while at the same time adding materially to our knowledge of their clinical aspects.

For neurology, contrariwise, the tendency seems to be to extend our concepts into the greatest number of multiples and to increase and confuse classification without adding anything material to our actual knowledge. Diseases of the nervous system still remain disconnected, isolated entities, having neither pathological nor clinical relation to each other or to any underlying concepts. All of which is offered, not in criticism of Jelliffe and White's work, but in comment upon neurology in general. This book is as satisfactory, after its kind, as the state of our knowledge will permit.

ROBINSON: "TREATMENT OF GONORRHEA"

The Treatment of Gonorrhea and Its Complications in Men and Women. For the General Practitioner. By William J. Robinson, M. D., Editor of *The Critic and Guide and American Journal of Urology, Venereal and Sexual Diseases*, etc. New York: The Critic and Guide Company. 1915. Price \$2.50.

On the title page this book is declared to be "For the General Practitioner," and careful examination makes good the claim. The subject of gonorrhea is treated in such a lucid way and with such careful attention to detail that any general practitioner of average intelligence can secure through its perusal the knowledge necessary to handle any ordinary case of the disease with satisfaction and success.

Doctor Robinson is not a pessimist. He does not look upon gonorrhea as an incurable disease, in this respect differing from the morbid and melancholy position taken by many modern writers and sociologists. He also believes that not to exceed twenty-five percent of the population ever suffer from the disease, again going counter to popular opinion.

In treating the topic of gonorrhea, he begins at the beginning, with the germ and

the technic for its recognition. Then he describes the course and symptomatology of the disease, and outlines the treatment for an ordinary acute case. He also takes up the nongonorrheal types of urethritis, but devotes the largest portion of his book to the discussion of chronic forms of gonorrhea and its complications. Naturally and properly, most attention is given to therapy. Of special interest to the readers of *CLINICAL MEDICINE* are the chapters on prostatitis, which have been considerably elaborated in a series of articles now appearing in this journal.

The latter portion of the book contains a wealth of detail regarding treatment, the use of the silver salts, antiseptics, vegetable astringents, the abortive treatment, and, finally, a useful formulary. The book is one which it gives us much pleasure to recommend.

WILSON: "HYGIENE"

Student's Textbook of Hygiene. By W. James Wilson, M. D., D. Sc. New York: The Rebman Company. 1915. Price \$2.50.

The author occupies the post of lecturer on hygiene and public health at Queen's University, Belfast (Ireland), and this book is based on a course of lectures delivered by him during the past seven years at that institution. It is written especially to meet the requirements of students of medicine, and, therefore, ought to constitute an excellent textbook for teaching purposes in medical schools. However, this is by no means the limit of its scope of usefulness, for unquestionably it will prove of value to sanitary inspectors, health-officers, and, in fact, to all who are in any way interested in public health.

As the author quite properly points out, it is impossible for a textbook of this limited size and character to do more than deal with the principles of the science of hygiene and to indicate their application. It is manifestly impracticable, for example, to go into all the details of water, food, and air analyses; and these are better learned in the laboratory, anyway. Sufficient information is contained in this volume, nevertheless, to enable the reader to understand the meaning and the value of such analyses, and to appreciate the responsibilities resting upon health-officers, general practitioners, and private individuals, with regard to the preservation of the health of the community.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Answers to Queries

ANSWER TO QUERY 6174.—“Painless Cure of Hemorrhoids.” I am amused by the query on page 196 of February *CLINICAL MEDICINE*, on the one-day painless cure of hemorrhoids, and your comments thereon. Permit me to say that the treatment of hemorrhoids there referred to undoubtedly is the same that I have advocated and used—though “twenty-four hours” is rather quicker than the time of cure commonly observed.

It is so easy, you know, to say to a nervous patient who probably would refuse having a needle thrust into a painful hemorrhoid, “I will just make a special application to your pile”; and this, I presume, that doctor in question does say, and then proceeds to make the [phenol?] injection with so little pain and no after-soreness that the patient is not aware of what was done.

Of course, this cannot be done in all cases, but may be in a large percentage. In my own person (I treated myself), I did not know when the tumor dropped off, but, out of

four, three were gone within three days or less.

There is no other way to get such results, I feel sure.

C. A. FREEMAN.

Geary, Okla.

—
ANSWER TO QUERY 6167.—I am much interested in the Query 6167. Your advice relative to the iodine is good, but I think that it would be very much better to give iodine intravenously and also to give large doses (8 grs. or larger) of cacodylate of soda; even though there may be no history of syphilis organic arsenic will sometimes do wonders in clearing up these cases.

I hope you will publish the report of your pathologist on the smears.

CLINICAL MEDICINE is still my favorite and eagerly scanned for articles of special interest to me.

W. N. FOWLER.

Kalamazoo, Mich.

Queries

QUERY 6182.—“Chronic (Recurrent) Stomatitis.” C. L. R., Oklahoma, is treating a woman, aged twenty-one, whose mouth, throat, and tongue, he explains, “become so raw and sore each month that she cannot eat or swallow without pain, while her gums appear as if she had been salivated, and her breath is very offensive. She has been thus troubled for several years, although not so badly until the last year or so. This condition will improve more or less in the course of the month, but invariably recurs.”

It is evident that the treatment in this case, to be effective, must be based upon a clear conception of causative conditions. It is just possible that she has pyorrhoea alveolaris, which for some systemic reason becomes

aggravated at the monthly period; on the other hand, it is more than likely that the woman's body-chemistry is seriously deranged and in consequence the autotoxemia during her menstrual periods becomes so pronounced that the “weak spot,” the area of least resistance—in this case the buccal mucosa—is the one attacked.

It would be well for you to have a specimen of this patient's urine examined, as well as a smear from the gingival margin taken when the infection is at its height. See whether at any time you can express pus from around the roots of the teeth. Then, in your letter, describe the condition of the tongue: Is it heavily coated; if so, is this coating around the center or on the base?

Also, what is the color of the coating? Has she any carious teeth? Is she constipated? her menstrual flow offensive? Is there leucorrhea between periods? Are there present any abnormalities of the pelvic viscera? Are her feet cold or do they perspire freely—that is, so as to soak the stockings; if so, has the perspiration an offensive odor? What is the pulse rate? Has the patient ever had typhoid fever or rheumatism? All these are questions of importance in arriving at a tenable conclusion. Other obvious irregularities should be noted and stated.

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 QUERY 6183.—“Streptococcus or Mixed Infection?” A. I., Wisconsin, is “treating two cases of streptococcus infection, both following an attack of so-called grip. A noted Wisconsin laboratory has found the streptococcus.” There is some cough, no fever, and the temperature shows a tendency to be subnormal from 1° to 1.5° F. in the morning, and this gradually rising as the noon-hour approaches. One of the patients is troubled with increased bronchial breathing, the other has more or less pleuritic pain on the left side, more pronounced after eating. Both subjects “catch cold” very easily, even when merely changing stockings or underclothing, or on the least change of the weather. The question is asked whether possibly the streptococcus infection is causing most of the trouble of these patients, and would a vaccine prove beneficial?

As to the last question, we hesitate to prescribe a vaccine, in the absence of more exact knowledge of the nature of the infection. You merely tell us that you “have two cases of streptococcus infection.” We gather that the sputum shows streptococci, staphylococci, probably some influenza bacilli and micrococci catarrhalis—a typical “mixed infection.” In such cases, the pneumococcus combined bacterin may be given to advantage, the patient at the same time receiving, by mouth, the following: nuclein-solution, m. 10; guaiacol carbonate, gr. 1; calcidin, gr. 1-2; with 5 minims of nuclein additional, repeated three times daily. Also, every three hours (four times daily), quinine salicylate, gr. 1; echinacoid, gr. 1; and calcium sulphide, gr. 1-3.

The nares, nasopharynx, and buccal cavity should be thoroughly cleansed with an alkaline antiseptic two or three times daily, and then the patient inhale vaporized camphomenthol.

If the cough is troublesome, collinsonoid with apomorphine should be ordered every

two or three hours; the tablet being slowly dissolved in the mouth.

In all these cases, iodine, nuclein, and quinine may be regarded as the dominant remedies, with calcium sulphide as the most useful alternant. If patients are saturated with calcium sulphide and given quinine and iodine to effect, so-called grippal attacks are very mild and of short duration.

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 QUERY 6184.—“Hemianopia of Thrombotic Origin?” J. G. D., Illinois, submits the following case: “The patient, a woman of fifty-one, with negative family history, presents the following most remarkable history and symptoms:

“Twenty-one years ago, she had typhoid fever, which ran the regular course, although complicated by a thrombosis in the left iliac vein; but recovery was complete and uninterrupted. Seven years after that sickness, she experienced a sudden attack of heminopia in the left half of the visual field, and from this she has never recovered. Although the ‘specific’ history and findings elicited were negative, she was placed upon ‘antispecific’ treatment. This did no good. She took potassium iodide to the extent of 150 grains per day, without exhibiting any signs of iodism. Last March, she experienced a slight paralytic stroke on the left side of the body. This seems to be permanent. At the present time, the woman is extremely nervous and displays a highly neurotic disposition. Tests of the urine, blood, and the reflexes all give negative results. In my opinion, the trouble points directly to the thrombosis that occurred when she had the typhoid fever, the heminopia and the paralysis resulting directly from the emboli from the thrombus in the vein. Can you suggest a course of treatment?”

Frankly, doctor, after considering the facts as presented, we are inclined to believe that, while typhoid fever may have played some indirect part in the etiology, it was not of the importance you attribute to it. To be specific, hemianopia is practically never caused by embolism. The vessels involved in heminopia are those of the fasciculus of Gratiolet, and it is almost unthinkable that emboli should ever invade those blood-vessels. Embolism almost invariably attacks the vertebral or the basilar arteries, and these do not result in hemianopia.

Despite the rather early age at which this patient suffered her attack of hemianopia, we believe it was due to hemorrhage in the optic fasciculus; and that her later attack of

hemiplegia is probably owing to the same thing in the capsule. It may, possibly, be a thrombosis, which not infrequently is quite sudden in its final denouement; but hemorrhage is much more likely.

Unfortunately, treatment can only be symptomatic. Although the hemorrhages thus far have not been serious, we must bear in mind the possibility of a severe and fatal one to ensue at any time. Should this not occur, the organized degeneration started by the present hemorrhage may go on increasing and, thus, finally cause death. On the other hand, the woman may live for many years without experiencing any further cerebral trouble, and eventually die from some other cause.

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QUERY 6185.—“Chronic Ulcers.” O. M. C., Florida, is confronted by a peculiar condition, new to him, in the shape of a great number of chronic ulcers, breaking out on a patient's leg and foot. “They were just sores that grew worse and worse, until they were about the size of a silver quarter. The ulcers are intensely red, and there is considerable discharge that is quite hard to remove. They are generally quite depressed, with well-defined and abrupt edges, but particularly thick and hard. There seems to be an absence of granulations. These ulcers have resulted from slight injuries, and they are intensely painful at times. There seems to be nothing wrong with the general health of patient.” The Doctor has vainly tried cleansing with hydrogen peroxide and also phenol solution; has tried permanent wet dressings followed by ointments containing balsam of Peru, scarlet-red, and other remedies. The patient objects to bandaging the entire limb.

We must regretfully admit that there are few things more trying to the patience of the practitioner than the management of leg-ulcers, particularly when the patient cannot or will not remain quiet for a time and give the limb the benefit of rest and elevation.

We are inclined to believe that thorough cleansing of the ulcers with hydrogen peroxide and the subsequent application of iodized camphophenol (equal parts of carbolic acid and camphor triturated together with iodine, 5 grains to each ounce), twice daily for two or three days, then of an astringent ointment on gauze, this covered with a snug elastic bandage, will prove effective in the variety of ulcer you describe. However, a more radical procedure may be required.

Small quantities of a local anesthetic may be injected at several points around the ulcer until it becomes insensitive; then curette with a sharp spoon. The whole surrounding area should be closely shaved and thoroughly washed and then a moderately thick layer of Unna's paste applied.

Bear in mind that in all these cases thorough elimination is essential. The patient usually also requires reconstructive tonics—triple arsenates with nuclein, a dose two or three times daily, will meet the requirements in the majority of instances.

Where the ulcer is intractable, staphylobacterins may be injected. *Small* ulcers sometimes will heal under a coat of benzoinated collodion.

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QUERY 6186.—“The Use of Calx Iodata During Pregnancy.” N. C., Iowa, wishes to know whether there is any danger in giving pregnant women calx iodata, or to what extent its use may be carried without producing abortion. He has used it without encountering bad results, but has wondered whether the iodine content might not cause abortion in a pregnant woman.

This writer has used calcidin (calx iodata) for some fifteen years and has frequently given it “to effect” to pregnant women, without observing the slightest undesirable symptoms. Indeed, iodine in therapeutic doses is not likely to produce abortion, and, as presented in calx iodata, certainly would not do so.

It is a question, of course, whether oversaturation, i. e., the production of iodism, under such circumstances would be desirable; and it is conceivable that under such conditions extremely sensitive women might abort.

During the first two or three months of pregnancy, iodine—or any other potent alterative drug—should be given with a certain amount of caution; and here, as elsewhere, it would be well to withhold the administration of the drug for three or four days of each month, eliminating freely meanwhile.

As a matter of fact, however, save in tuberculosis and similar conditions, it is rarely necessary to administer calcidin in large doses for a prolonged period of time, while during pregnancy, even under such circumstances, active medication is rarely desirable.

In all acute diseases to which a pregnant woman is subject, calcidin, in the usual dose,

may, therefore, be given to effect with perfect safety.

QUERY 6187.—“Resinous Paste for Making Splint.” H., Nebraska, writes: “In the work on diseases of children by Pfaundler and Schlossman (translated by Shaw and La Fetra) there is given a formula for a paste to be used in cases of club-foot, which reads as follows: colophony, 50; mastic, 25; alcohol, 95 percent, 360; terebinth, 30; res. alb., 15. Will you kindly translate this into a working-formula which an ordinary druggist can understand.”

In ordinary American terms, this formula reads as follows; the figures represent parts, percentages, ounces, or any chosen units: Take of colophony, or yellow rosin, 50 parts; gum mastic, 25 parts; alcohol, 95 percent, 360 parts; crude, or thick, turpentine (see U. S. P.), 30 parts; white rosin, 15 parts. Dissolve the rosin and mastic in the alcohol, before adding the crude turpentine. The reason for the white rosin in the formula is not at all apparent. Crude turpentine is rarely found in drugstores nowadays, except very ancient ones.

QUERY 6188.—“Giving Calcium Sulphide to Young Children.” W. S. R., Ohio, asks: “In what form can I give calcium sulphide to children too small to take the granules? I prescribe it largely in whooping-cough, but am unable to give the drug to infants.”

We suggest that you crush the granule of calcium sulphide (gr. 1-6) with a little milk-sugar, place the powder on the child's tongue, then let the baby be given its bottle, or a teaspoonful or two of water, or be placed at the breast. A solution of the drug cannot be termed palatable, but may, of course, be used. It should, however, be made freshly each day and remain covered. However, the present writer has never had the slightest trouble in giving calcium-sulphide granules to infants. Simply flatten the granule with a knife-blade, put it on the tongue, then give the child some fluid to swallow. That's all.

It is a very simple matter, though, to crush six or twelve granules, mix the powder with the desired quantity of sugar of milk, and dispense this in the form of powders, directing one of these to be given every two or three hours.

For a liquid mixture, it is an excellent idea to use a petroleum emulsion as a base. Dissolve the necessary number of calcium-sulphide granules or tablets in a little hot water, then

for each dose add 1-2 or 1 teaspoonful of the emulsion and mix well. The dose will be from 30 to 60 drops every one, two or three hours, according to circumstances. The mixture must be shaken before the medicine is poured out.

Also see the article on “Palatable Prescribing for Children,” which appeared in the September (1915) issue.

QUERY 6189.—“Trophoneurosis?” J. R., Indiana, is treating a woman 70 years of age who five years ago began to have a feeling of “soreness” on the top of her head, this spot being not larger than a dollar, but the area gradually increased, until now it is almost four inches in diameter. The sensation is a very disagreeable one, sometimes feeling cold, sometimes hot. There is some pain most of the time, and the scalp is very sore when touched. Otherwise her health seems to be pretty good. “However,” the Doctor writes, “about two months ago, the woman began to feel a dead, heavy aching in the left shoulder, which extended down the arm to the fingers. Now the other shoulder, arm, and hand are affected in about the same way. She calls it a constant ‘dead, heavy boneache,’ plaguing her day and night and permitting of no rest or sleep. It is somewhat sore to the touch, but not swollen or reddish; objectively, one cannot see anything wrong. Her bowels are moving all right; she has no heart trouble; temperature is normal; tongue is clean; kidneys are acting, seemingly, as they should, and the urine is of about the right color, although depositing some white sediment; there is no soreness of the liver, kidneys, spleen, stomach or spinal column. This woman has been treated by half a dozen other physicians, but all have failed to give the malady a name or to do her any good. What is it?”

Unfortunately, the clinical picture is not clear enough to enable us to venture a definite diagnosis.

Pain in the “top of the head” (the vertex), especially when the area involved is not much larger than two or three inches in extent, is, as undoubtedly you are aware, due either to some hemic disorder (anemia) or to neurasthenia. Epilepsy can be excluded. The possibility of hysteria must be seriously considered, though there may be present some uterine or vesical disease, and this reflexly causes the sensations in the scalp.

The “deep bone pains” developing later in both arms constitute a somewhat peculiar

symptom, which leads us to think particularly of rheumatism; that is, autointoxication—the retention of waste material in the system.

You state that you discover no cardiac disorder. Valvular disease, therefore, may be excluded, together with angina pectoris. An enlarged spleen might cause pain in the *left* arm. Neuritis is almost always unilateral, as is also cervicobrachial neuralgia.

There remain to be considered paralysis agitans (but as to this other essential symptoms are lacking), syringomyelia, and progressive muscular atrophy. However, no evidence of the existence of these latter diseases seems to exist. Naturally, the advanced age of the patient would lead us to look for degenerative changes; and quite probably more or less arteriosclerosis is present. In addition, the possibility of a cerebral tumor must not be lost sight of.

Send to a good pathologist for examination a specimen of the woman's urine (4 ounces of the 24-hour output, stating the total quantity voided). Test the reflexes carefully. See whether you can discover tenderness on deep pressure along the spine. State the present and former weight of the patient. Make a very careful examination of the pelvic organs. Then report in full.

We are inclined to believe that improvement will follow thorough elimination and the maintenance of a therapeutically clean digestive tract, supplemented by careful dieting and an epsom-salt sponge-bath given every second or third night.

As a first procedure, doctor, place the patient on her right side and give her a copious salt-water enema. Then give calomel, 1-6 of a grain or blue mass and soda, gr. 1-2; podophyllin, gr. 1-6; irisoid, gr. 1-6; given half-hourly for four doses. Then, a few hours later, a full dose of a saline laxative. For the pain, give, every three hours, salicylic acid (natural), gr. 1; calcerin, gr. 1-3; colchicine, gr. 1-250; bryonin, gr. 1-128; macrotoid, gr. 1-12; boldine hydrobromide, gr. 1-64; together with suitable aromatics; to be taken with 4 ounces of hot water. Also, order bilein, gr. 1-12, with pancreatin, one hour after each meal. Every second or third night, have the entire body sponged with epsom-salt solution (1 ounce to 3 pints of water), followed by an alcohol-rub.

Faradization of the spine, or the application of the high-frequency current may prove beneficial. Be very positive in your suggestions. However, the prognosis, so far as

recovery is concerned, should be somewhat guarded.

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QUERY 6190.—“Dosage of Staphylo-Acne-Bacterin.” E. N. F., Ohio, desires information concerning the use of polyvalent staphylo-acne-bacterin. He writes: “As an ampule contains 550,000,000 killed bacilli and the initial dose is 50 to 250 million, one such ampule would contain from two to ten doses. Is this correct? What may be regarded as a safe initial dose for a girl eighteen years old, whose condition is not severe—being afflicted with a good many blackheads, or comedones, and a moderate number of pimples containing pus? If too large a dose is given, what reaction will occur? If the doses are not large enough, how may I know? Is each successive dose after the initial one to be increased? If so, by how much; and what determines this increase?”

One ampule of staphylo-acne-bacterin contains, as you say, 500,000,000 killed mixed staphylococci, and 50,000,000 acne-bacilli. The initial dose being from 50 to 250 million killed bacteria, one ampule contains, as you also figure it, from two to ten initial doses.

The initial dose of 50,000,000 is necessarily a small one, but is fixed at that amount because the dose is figured approximately upon the number of acne-bacilli, of which latter 5,000,000 is the initial dose in the case of children; and, besides, it is often preferred by those who are very cautious, lest they produce any reaction whatever by it, inasmuch as many patients entertain a definite horror or fear of hypodermic injections.

A woman of eighteen, who is of fair physique, should receive as an initial dose about 250,000,000 organisms, that is, one-half of an ampule. If this happens to be too much, there will occur a reaction of the nature described in appropriate literature, including a rise of temperature, marked depression, and some local pain and swelling, which sets in within a few hours after the injection but rarely lasts longer than forty-eight hours. If the dose is insufficient, no clinical reaction occurs, and no—practically no—improvement in the pathological condition follows.

After the initial dose of one-half ampuleful, we should give the entire contents of one ampule for the second dose. If this does not produce too much of a reaction, we should continue this dosage for five or six doses, and then give the contents of two ampules at a time, repeating this for five or six doses. It is but rarely advisable to administer more than the contents of two ampules as a dose

at one time. It probably will be better to give one ampule every four days, instead of two every seven days; in other words, shorten the intervals, instead of increasing the dose.

It is essential that the directions as to hot fomentations or other methods of increasing the local blood supply at the site of the lesions be thoroughly carried out. All comedones must be expressed and all pustules incised. It is impossible to cure acne if the cuticular glands remain filled with sebaceous material, as evidenced by large numbers of comedones. These act as irritating foreign bodies and must be removed.

Do not forget to pay particular attention to the gastrointestinal tract, making sure that the patient is not suffering from constipation. Also, the urine must be examined, to be sure that there is no evidence of indican in large amounts, thus indicating a marked digestive disturbance and absorption of toxins from decomposing fecal material, which are constantly poisoning the patient to such an extent that there are no reserve forces capable of stimulation by bacterins or any other means. In such a condition, it is impossible to cure acne with bacterins or any other known means.

QUERY 6191.—“Obscure Pain in Thigh.” E. E. F., Oklahoma, asks for diagnosis for a case presenting severe pain, with little or no swelling, on inside of thigh of the left leg, occurring in a male, age 44. Tongue and breath very foul, temperature 102° F., constipation, urine highly colored and scant, negative as to albumin and sugar. The doctor gave 1-2 percent solution urea and quinine subcutaneously, which controlled local pain, and it has not returned, but the foot and ankle began to swell the next day, gradually extending to groin, and this still continues after return to normal in all other respects. He asks: “Is this a case of elephantiasis? The swelling is not improved by rest and elevation, but he feels better with moderate exercise. Would hot-air treatment benefit? There is a slight rash on instep which I have attributed to heat from rubber shoe.”

We have very carefully considered the clinical data presented, and regret to say

with our limited knowledge of basal pathological conditions it is impossible to venture a diagnostic or therapeutic suggestion. It is hardly likely that you have to deal with a case of elephantiasis. The swelling about the ankle may be due, as you are of course aware, to any one of several conditions. As the edema did not make its appearance until the urea and quinine was injected, it is quite possible normal conditions will return after thorough elimination, renal, dermal and intestinal, and application of hot compresses, followed by proper massage, to the affected extremity.

On the other hand, the possibility of obstruction—thrombotic or otherwise—must be borne in mind. You do not state whether there is still any pain or if the parts pit upon pressure; any luetic taint; patient addicted to the use of alcohol.

If any reader of this Journal can throw any light on the diagnosis of this case we shall be glad to hear from him.

QUERY 6192.—“Lycopodium.” J. McD., Pennsylvania, wants information regarding the action of lycopodium, especially when insufflated.

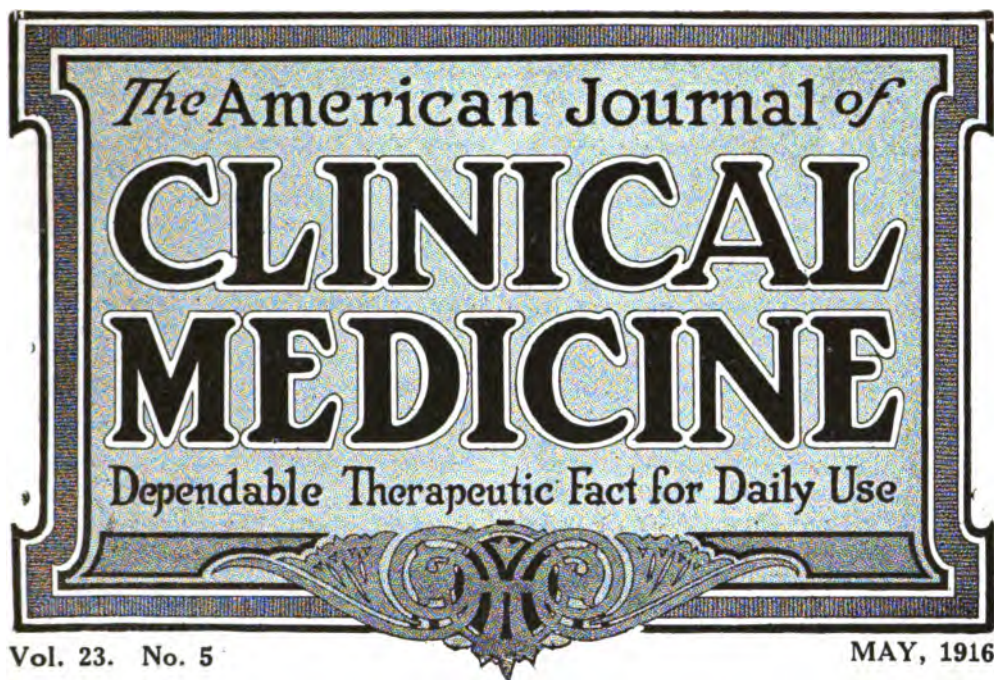
Lycopodium is an odorless, tasteless and, in the estimation of most physicians, therapeutically inert substance.

In olden days, lycopodium, the spores of club-moss (see Dispensatory), was considered to possess diuretic and antispasmodic properties, but nowadays by many is considered inert, and is chiefly used in rolling out pill-masses to prevent its “sticking”; it also is considered an excellent protective dusting-powder for excoriated surfaces, especially for infants.

Homeopathic practitioners administer lycopodium, in various attenuations, in affections of the mucous tracts, flatulence, constipation, ileocolitis, hepatic congestion, aneurism, chronic affections of the lungs and bronchi, diphtheria, lithiasis, pruritus ani, and many skin diseases.

When insufflated, lycopodium might at first act as a mild irritant as any foreign body, causing sneezing, lacrimation, and so on. Many people, however, inhale the substance without experiencing any effect whatever.





Making the Patient Comfortable

UNDER the very timely title of the above heading, Dr. H. K. Shumaker contributes to *The Medical Council* two pages of excellent suggestions concerning what might be called the personal side of medical practice; and, except for the limitations of his own time and of the journal's valuable space, he might well have lengthened his writing into as many hundred pages without exhausting either the interest or the importance of the subject.

"No physician," says Doctor Shumaker, at the outset of his remarks, "however well educated, is fully prepared for his life-work until he has passed through a serious illness." Which reminds one of the similar dictum of the author of "Confessio Medici" (that delightful book which I fain would put into the hands of every medical graduate in the land): "You cannot be a perfect doctor until you have been a patient; you cannot be a perfect surgeon until you have enjoyed in your own person some surgical experience."

"Perhaps," continues this author, "you have never been seriously ill, never come to that point of sharp thought where the physician, the surgeon, the anesthetist are your best friends, your Godsend, not because they talk to you about the National Gallery, but just because they do *not* talk,

but dose, anesthetize, and incise you. Every doctor, early in his course, ought to stand at that point."

It would certainly do us all good to stand there. But, whether we do or not, we must, somehow or other, learn the lessons that are to be learned only by putting ourselves in the patient's place, if not actually, then in imagination. We are a little too prone, all of us, in these days of high tension and exacting demands, to let technical skill and erudition shut out the more human phases of our work and influence. We need continually to remind ourselves that we are dealing, not with a bad heart or a diseased liver, or an inflamed kidney, but with a human patient, a man like ourselves; and we need to bring our far-seeing gaze in from the searchlight of the microscope occasionally, and direct it to the homely task of making the patient comfortable.

This lesson applies both to the seemingly trivial (nothing, indeed, really is "trivial" in the care of a sick person) and to the larger aspects of the situation, from the adjustment of the window-shades of the sick-room to the consideration of the psychology underlying the patient's disease and his reaction to treatment. In this whole range of applica-

tion, it is our duty to "make the patient comfortable."

As an instance of the little things in which this ministry to the patient's comfort is to be carried out, Doctor Shumaker mentions the palatability of the medicine which we prescribe. "Occasionally," he writes, "it may be necessary to inflict a nauseous medicine on a sick man, but, when about to do so, let the doctor remember the golden rule and take another thought concerning the prescription." Happily, the doctor who uses active principles is not often faced by such a problem as this; and those practitioners who are confronted by it may find a happy solution in the alkaloidal preparations, which are as easy to take as they are effective in results.

This, of course, is but one little example of the way in which the doctor may minister to the patient's comfort. There are a hundred and one human touches which experience and the spirit of sympathy will teach him.

I cannot refrain from quoting a little further from "Confessio Medici" on this question of getting the patient's viewpoint:

"To be ill or to undergo an operation, is to learn the comforts and discomforts of an invalid's life; the unearthly fragrance of tea at daybreak, the disappointment of rice-pudding when you thought it was going to be orange-jelly, and the behavior of each constituent part of the bedclothes. You know, henceforth, how many hours there are in a sleepless night; what unclean fancies will not let us alone when we are ill; how illness may blunt anxiety and fear, so that the patient is dull, but not unhappy or worried; and how we cling to life, not from any terror of death nor with any clear desire for the remainder of life, but by nature, not by logic.

"In brief, you learn from your own case many facts which are not in textbooks and lectures; and your patients, in the years to come, will say that they prefer you to the other doctor, because you seem to understand exactly how they feel. I wish you, therefore, young man, early in your career, a serious illness or an operation, or both. For, thus, and thus alone, may you complete your medical education and crown your learning with the pure gold of experience."

Then, of course, there are the larger and deeper aspects of our patients' human nature which demand our consideration. Of these, I cannot here speak at length, but only hint at them. I wish every doctor in the world could read Cabot's "Social Service and the Art of Healing"; for, there he would find this broader phase of the subject set forth

far more simply and clearly and inspiringly than I could hope to do it, were I to try.

"The enormous influence of spiritual environment, of friendship, of happiness, of beauty, of success, of religion," says Cabot, "is grievously, ludicrously underestimated by most physicians, nurses, and hospital superintendents. There are diseases that cannot be cured without friendship, patients who never will get well unless you can get them to make a success of something or to conquer their own self-absorption by a self-devotion, losing their life to find it." All of which is but an extension of the intimate psychology of "making the patient comfortable."

The bluebird chants, from the elm's long branches,
A hymn to welcome the budding year.
The south wind wanders from field to forest,
And softly whispers, "The spring is here."

—W. C. Bryant.

DISPENSING NARCOTICS IN INDIANA: WATCH OUT!

In the Miscellaneous Department of this issue, we are reproducing an editorial appearing in the March issue of *The Journal of The Indiana State Medical Association*; this article giving the status of the efforts that have been made by the Board of Pharmacy of that state to prevent physicians from dispensing narcotic drugs. This matter, it will be remembered, was discussed editorially in *CLINICAL MEDICINE* for February.

We strongly advise every one of our readers, whether he lives in Indiana or elsewhere, to familiarize himself with this subject, for, this attack upon the right of practitioners to dispense narcotic drugs undoubtedly is only a part of a larger issue that has been raised and is being agitated by certain elements of the retail drug trade.

Anyone who follows the discussions of this question in the drug journals and endeavors to keep in touch with the course of legislation cannot doubt that a more or less determined effort is being made to prevent physicians from dispensing their own drugs. Limitation of the right to dispense narcotics, if secured, surely soon will be followed by similar curtailment of the right to dispense other poisons—strychnine, aconite, hyoscyne, arsenic, mercury—the end aimed at being, of course, the entire and complete prohibition of all dispensing on the part of the physician, except in emergencies; the actual handling of medicines to be transferred to the drug trade, with all the emoluments and advantages thereto appertaining.

It is because there is such a trend and such an effort, that it behooves the medical profession to keep closely in touch with the situation and to permit no encroachment upon their ancient rights.

In saying this, however we wish it understood that we are advocating no fight with the pharmacist. The pharmaceutical profession and the medical profession should be in full harmony with each other and on friendly terms. These two honorable professions have too much in common to be flying constantly at each other's throats.

"To the scientist there is nothing so tragic on earth as the sight of a fat man eating a potato." Culled from "Eat and Grow Thin."

THE OCCASIONAL DRINKER AND THE MECHANICS OF ALCOHOL

A great many people delude themselves into the belief that moderate indulgence in alcohol does not hurt them, and likewise can not hurt anyone else. For the man who likes his "little drink," this is a very pleasant frame of mind. However, when the problem is illuminated by the cold, clear light of science, we find that the occasional drink is not the harmless thing some of us would like to believe.

Some very surprising facts relative to the effects produced by the consumption of even small amounts of wine or beer, when thus taken with meals or at any other time, are presented by our friend Dr. Edwin F. Bowers in an article appearing in *American Magazine* for April, supporting his position with the testimony supplied by various instruments of precision employed in measuring the physical and mental reactions after the ingestion of small quantities of alcoholic beverages. Thus, for instance, ergographic tests demonstrated that a glass of Bordeaux wine (equivalent to about 1-3 of an ounce of alcohol—freely diluted with water) regularly drank after each meal, reduces the ability of such person to withstand muscular fatigue by from 7.6 to 8 percent. These experiments, Doctor Bowers asserts, have been duplicated hundreds of times by various European scientists, and "in every instance a definite measurable loss of muscular efficiency was shown."

Other investigators, we are told, demonstrated that under the influence of such a small quantity of an alcoholic beverage the speed with which the subject is able to write figures and letters is reduced by from 5.6 to 7.3 percent, and this after the ingestion of

so small an amount as "just about what the ordinary drinker might take with his dinner." "Again and again," Doctor Bowers adds, "these same general results were secured, though new crews were used for each demonstration."

Experiments were also conducted with accountants both during periods of abstinence and of moderate indulgence in alcoholic drinks of, say, the strength of beer and wine. In their case, it was found that after two weeks of such moderate indulgence their output of work was reduced, on the average, by about 15 percent. Similar tests made with typesetters showed an average reduction of efficiency of 9.6 percent in one week.

When various tests were made to determine the effect of moderate drinking upon the memory, it was found that two weeks of such indulgence caused a reduction of between 6 2-3 to 14 percent in their ability to remember figures, while in individuals normally able to memorize 25 lines of Homer a reduction of 18 percent was demonstrated under the influence of the alcoholic. It was admitted, however, after a time, when these individuals had become accustomed to alcohol, the difference in ability to memorize was not so great, amounting to not more than between 5 and 7 percent. When alcohol was taken on an empty stomach, as, for instance, the first thing in the morning, its effect was much more pronounced, the reduction of efficiency in some instances amounting to nearly 70 percent.

Another very interesting series of tests was made, designed to establish the relation between visual acuity and muscular response; in other words, to determine how much more quickly a man not using alcohol is able to turn a switch after a signal, given by a flash of light or the raising of a colored flag, than one who indulges in such beverages. For instance, the subjects "were directed to press a button, which stopped the watch, and, so, recorded the length of time needed to perceive the flag, decide its color, and press the proper button to designate that color." Invariably the men using alcoholic beverages were from 6 to 13 percent slower in responding—assuredly a difference great enough to result in the ditching of a train should the engineer, under given circumstances, happen to have a little beer under his belt.

"These studies in exact science," Doctor Bowers writes in concluding his article, "made under the strictest conditions, indicate that alcohol depresses, anesthetizes, and narco-

tizes, and that its first effects on the nerves are, to diminish acuteness and pervert activity. Sending the blood to the head, where it surges through the brain with increased velocity, is not increased vigor, but increased irritation, which comes just before anesthesia and diminution of power. The drinker deludes himself, for he only thinks he is thinking. His very first drink has produced a definite, measurable degree of intoxication. Therefore, it seems quite clear that, if a man has any brains worth preserving, alcohol is the poorest preservative he could possibly pick out to use."

The most dangerous disease that afflicts humanity is not smallpox, pneumonia, typhoid, or even tuberculosis, which levies its grim toll upon one out of every twelve civilized humans. It is common constipation—not so much a disease in itself as a cause of other diseases.

—Dr. Edwin F. Bowers.

EPILEPSY UP TO DATE

Epilepsy stands high on the list of the opprobria of medicine. To many, there has been developed nothing especially new about its treatment since the introduction of the bromides. To the better-informed, the literature of the past half-century presents a succession of crude therapeutic suggestions, founded upon archaic or superficial hypotheses and so totally dissimilar as to possess little in common except the lack of success in their clinical application.

Occasionally there appears someone favored with the opportunity to study this strange malady firsthand in the Book of Nature, who is possessed of the ability to do so, and, lastly, who takes in the study of this difficult problem a certain heartfelt interest—and then it is that we get such results as are reported in Edward F. Leonard's paper published in the current number of *The Illinois Medical Journal*. As one of the staff of the Jacksonville State Hospital, Doctor Leonard had abundant opportunities to observe the manifestations of epilepsy, and here are some illustrative examples of what his studies have yielded.

As a rule, Doctor Leonard found, the chronic epileptics are stout and well nourished, and have a big appetite; they are chronically constipated; are little subject to diseases, except of the gastrointestinal type, and are without attacks of convulsion during and shortly after any illness; are not disposed to bedsores or infection of wounds; their breath has a sour odor during their fits; temperamentally they are stubborn and

quarrelsome, causing three-fourths of the disturbances occurring in their wards; their monotonous, drawling voice is diagnostic; their facial expression is dull and sullen; many cases resemble those of the catatonic type of dementia præcox, in fact, the two conditions may coincide.

Among the hypotheses regarding the etiology of epilepsy, Doctor Leonard mentions Haig's uric-acid, Krainsky's carbamate of ammonium, Donath's cholin, and Ceni's cytotoxin, and adds: "Of none of these, is there proof; the evidence points to these as effects rather than as causes." A summary of the results of the studies of excretion in 140 cases follows.

When patients were not having convulsions, the percentage of chlorides in the urine increased up to or above normal; calcium was more abundantly excreted. During convulsions, calcium excretion was slight or wanting; sodium chloride was diminished; convulsions varied with the percentage of Ca and NaCl in the urine. Four hours after convulsions, when the subject was sitting up, the sodium chloride rose to nearly normal and calcium reappeared. When the percentage of sodium chloride was normal or in excess, the calcium also rose; when the percentage decreased, calcium almost always was absent, and nearly so in the few exceptions.

During convulsions, the blood was thicker, darker, coagulated faster, formed larger and firmer clots, and contained many calcium-carbonate crystals, some calcium oxalate and some phosphate crystals. Four hours after the convulsion, the blood was lighter-colored, thinner, less quickly coagulable, the clot softer, and the calcium-salt crystals were about normal.

There appears to be a well-marked antagonism between the calcium salts and those of potassium and sodium, the former promoting contraction, the latter, relaxation. Calcium salts in small doses promote anabolism, but katabolism in large doses. They are toxic when not counteracted by the alkali elements. Pugh has said that the alkalinity of the blood in epileptics is constantly lower than in normal persons, falls before the fits, and returns to normal after six hours, unless another fit is soon to occur. The alkalinity enables the blood to carry that much carbon dioxide for excretion.

Subjects of epilepsy crave salt and also acids; hence, we may assume in them a deficiency of sodium chloride. Systemic retention of sodium chloride is a known factor

in the origination of edema—and epileptics show no edema. Calcium favoring coagulation, the rapid clotting of blood in epilepsy lends color to the conclusion that there is present an excess of calcium.

To determine the amount of iodine in the system, Doctor Leonard divided patients into groups and fed them, respectively, thyroid extract, iodine or potassium iodide; within twenty-four hours, all these individuals had convulsions.

Blood drawn from an epileptic during a paroxysm, when injected into an animal, induced convulsions. In the same way, blood from status-epilepticus cases induced fits, but not when sodium chloride had been added to it. On the other hand, when the salted blood was injected during an attack of convulsions thus induced, the latter soon ceased, after a phase of polyuria. In the one case tried, an injection of calcium hydroxide into a cat was followed by convulsive phenomena.

During or within twelve hours after convulsions, the tongue invariably is thickly coated and the breath is foul; and this fact usually enables one to foretell the oncoming spasm.

MacCullom's investigations seem to indicate that calcium metabolism is controlled by the parathyroid bodies. Thyroid-gland administration is followed by increased urinary excretion of chlorides and by leukocytosis. Removal of the thyroid and parathyroid glands occasions an increase of calcium in the nerve-centers. Many epileptics present symptoms like those seen in exophthalmic goiter, such as enlarged throat, rapid pulse, carotid pulsation, tremors, digestive ills, irritability, vasomotor disturbances, cyanosis, and cold extremities. In some cases, a goiter has made its appearance just before the first attack of convulsions.

Upon the basis of these data, Leonard has constructed a theory about the probable causation of an epileptic convulsive fit in certain instances, the elements of which are:

A susceptible person; shock, psychic or somatic; disturbance of thyroid and parathyroid function, as evidenced by derangement of the chloride and the calcium metabolism; irritation of defective cortical cells by calcium; undue elimination of sodium chloride, with corresponding changes in the blood and in the gastric secretions; temporary suspension of the normal antagonism between calcium and sodium elements in the system.

"The treatment should be individualized." In his study of the disease, you see, Doctor Leonard has not lost sight of the patient. We learn:

Table-salt was eliminated from the diet for many months; no benefit resulted; rather, the patients became noisy, restless, quarrelsome, violent. Bromides afforded temporary control, but ultimately the convulsions returned with greater severity; bromide-intoxication finally precipitating the convulsions. An absolute milk-diet supplies too much calcium. Convulsions recur after meals of cabbage, turnips, spinach or rhubarb.

In the end, a diet poor in calcium was given—meat, fish, fruit, and potatoes. The quantity of food was strictly limited to the bodily needs. Plenty of salt was urged. For the stomach and bowels, hydrochloric acid and cascara sagrada were given. Salt enemas were occasionally advised. Hot physiologic salt solution, given rectally, frequently dissipated status epilepticus.

"Under this simple treatment, without any sedatives, the patients appeared brighter, their health improved, they were easier to handle, the spasms becoming less frequent and severe."

That the solution of this problem lay in the study of the metabolic derangement, was evident from the first—or, from the day when Haig announced his discovery of the cessation of uric-acid excretion preceding the outbreak of convulsions.

We may here hazard the suggestion that the clue to the successful treatment of the paroxysms was furnished by the postponement or stopping of the convulsion when the intense vasomotor spasm was unlocked by glonoin and hyoscyamine. The salt-abstinence proposal has furnished a valuable extension of knowledge, even though it now seems evident that the measure increases instead of lessening the tendency to convulsions.

No clinician of modern times has attributed to the bromides anything more than a dulling of abnormal impressibility to excitants—an advantage temporary and costly, at best. Whatever benefit really accrues from these debilitating agents can be better won from others that are not open to similar objections—solanine, for example. The use of sedatives that at the same time stimulate the elimination of toxins from the blood is in accord with the most modern and best-developed theories—and works well in clinical application. The substitution of a highly nitrogenized diet for the universal and indiscriminate

vegetarianism prevailing of late marks the return to reason of at least some of us.

Since beriberi and pellagra are curable by a diet of nitrogenous foods, we may now see physicians refrain from the stereotyped "light vegetable diet," and do some thinking before prescribing. Still—we don't know. We would willingly ascribe to men such attributes as are expressed by the words "thought," "reason," "logic," and "common sense," and especially to members of our own profession—but, we are not making claims very stoutly.

In his own life, then, a man is not to expect happiness, only to profit by it gladly when it shall arise; he is on duty here; he knows not how or why, and does not need to know; he knows not for what hire and must not ask.—Robert Louis Stevenson.

THE IMPORTANCE OF THE INTERNAL SECRETIONS

Had we as many years of medicine before as we have behind us, we should most assuredly take up as a special topic the study of Sajous' work on the ductless glands and of the literature that is rapidly growing up around it. Doctor Sajous committed his initial error in not being born and reared in Germany—and from this all his subsequent ills flow. Being a mere American, his remarkable work has received the welcome that was to be expected from his jealous compatriots, purblind to aught emanating from a native source.

However, the seed that Sajous sowed has proved too vital to be smothered in the weeds of envy and indifference, and one observes with pleasure how his ideas are growing into our medical literature and, like the hypothesis of evolution, becoming a part of the subconscious belief of the world. Sad to think, though, Sajous will not live to enjoy the recognition so justly due him. A century after he has gone, perhaps, his name will be solemnly embalmed in the annals of medicine—always provided that there be such things as medical annals.

To illustrate the way this matter has entered into the thought and the literature of the medical profession, take this extract from an interesting paper on colon-bacillus infection of the bladder, recently contributed by Robert T. Morris, to *The New York Medical Journal*:

"The question of allergy enters into some of these cases. We may fairly assume that one patient makes more decided response to the influence of the colon-bacillus than does

another patient, because the first one happens to be sensitized. This point must be taken under consideration by therapeutists of tomorrow. Another question to be taken under consideration by therapeutists of tomorrow is the relative resistance of one patient over another in relation to colon-bacillus influence, along lines of natural defense.

"This thought comes to mind because of one of my patients, a girl with nocturnal enuresis, who had colon-bacilli in the bladder, and highly acid urine, believed to be due to their presence. She made no response to treatment aimed at the colon-bacillus, until symptoms of hypothyroidism led to the employment of thyroid extract. Under this treatment, her own resistance was raised sufficiently to dispose of the cystitis and enuresis.

"It may be that a number of cases of nocturnal enuresis supposed to be due to hypothyroidism alone may have colon-bacillus cystitis as a secondary complication."

We have but touched the surface in our studies of the internal secretions. We may look for great progress along these lines, especially as regards the therapeutic application of these studies. Doctor Sajous has been a true prophet.

SUBSTITUTES FOR SALVARSAN—ESPECIALLY SODIUM ACODYLATE

In the treatment of syphilis, in the few years since this arsenical compound was introduced to the profession, arsenobenzol, or salvarsan, has become almost a necessity, at least for syphilologists. While this agent is not now admitted to be the infallible specific which, administered at whatever stage, will cure every case without resort to other medication, it nevertheless has established for itself a position of extreme importance. However, at present salvarsan is not being given alone, but mercury is always used also, either in association or preferably in alternation with it.

True, salvarsan at present is practically out of the market in this country, and, as a consequence, its scarcity has resulted in an enormous increase in price, and—at least in certain sections of the country—unfortunately the market has been flooded with bogus "salvarsans," some of them absolute fakes. Thus, in Chicago, for example, pedlars have sold to druggists and physicians ampules of what *seemed* to be the genuine article. The containers, labels, cartons, and literature of these goods are precisely like those of

directly imported and genuine salvarsan; however, an analysis of the fraudulent article showed that it consisted of nothing but a solution of salt in water. How much of this bogus "salvarsan" has been disposed of no one knows, but the quantity no doubt will turn out to be enormous.

Naturally, and very properly, physicians are beginning to look around for substitutes. The genuine salvarsan now commands such a high price that for the majority of patients its use is practically prohibitive. To meet this unfortunate situation, a group of Philadelphia chemists and physicians have succeeded in producing a substitute, and this is now being offered under the name of "arsenobenzol." This article is not being prepared and sold for profit; while it is said to be giving satisfactory results, it presumably is not identical with salvarsan (although given the same chemical name.) But on this point we are not advised. Of course, American chemists have the original German literature to base upon.

Many medical men are turning again to other arsenical preparations to take the place of salvarsan, the most popular of these being sodium cacodylate, the least toxic of all the arsenicals, being, indeed, much less poisonous and far safer than salvarsan itself.

On another page of this issue there will be found an article, contributed by Dr. L. A. Neiman, of Brooklyn, New York, who briefly reports his experience with this substance and also the manner in which he employs it. Doctor Neiman is in good company, for, many physicians whose interest in the cacodylates has been revived by the salvarsan shortage are deriving from this cheaper and less toxic arsenical a satisfaction apparently well nigh as great as that obtained from the more fashionable but also more expensive German salt.

The literature relative to the use of sodium cacodylate in syphilis is very interesting. We lack the space to review it carefully here. It may be stated, however, that it has been very warmly praised by Dr. John B. Murphy, of Chicago, who, in *The Journal of the American Medical Association* for September 24, 1910, writes as follows regarding its use in syphilis:

"One of the striking factors in favor of the claims of this treatment [with sodium cacodylate], is, that the most rapid effect is produced on the external, or visible, lesions. The cures appear to be permanent, as less than half a dozen relapses have been recorded, and most of these were easily traceable to deficient dosage or to improper administra-

tion." Further along in the article Doctor Murphy writes:

"When the system becomes saturated [with the sodium cacodylate], the patient has the typical arsenical breath, with a sense of gastric distress and loss of appetite. I have been giving it in doses of from 1 to 2 grains, hypodermically into the muscles, and it has a most striking effect on the syphilides, mucous patches, and primary chancre. From the latter, the spirochetes disappear completely in forty-eight hours, the induration is markedly reduced in twenty-four, and it becomes a soft, clean ulcer in seventy-two hours. From that time on, it repairs with the same speed as an aseptic sore of mechanical origin would heal in the same tissue. In other words, the sodium cacodylate seems to destroy the specific microorganism (the spirochete) which is keeping up the irritation. The adenopathies, except those with suppurating central foci, disappear in four or five days. The mucous patches repair in from twenty-four to forty-eight hours, the advancing ulcers of the palate and posterior wall of the pharynx clear up and heal as healthy granulating wounds in from three to six days, and the perforating ulcers of the palate repair in their margins, leaving the perforation in a healthy condition."

Doctor Murphy suggested that the initial dose of sodium cacodylate should be from 1 to 2 grains, depending upon the size and strength of the patient, and should not be repeated before three or four days, unless there are special indications. He has since then somewhat modified his technic, as will be shown later.

Dr. A. J. Caffrey, of Milwaukee, reports (*J. A. M. A.*, December 24, 1910, p. 2211) a case of primary chancre of the lip treated with sodium cacodylate according to the method advised by Doctor Murphy. He began with 1-grain doses and secured good results, but the sore would not heal completely. Upon the advice of Doctor Murphy, the dose then was increased to 3 grains daily, and the improvement following was said to be marvelous.

There also were contributed two interesting reports on the use of sodium cacodylate in the treatment of syphilis to *The New York Medical Journal* for April 8, 1911, the first by Dr. O. L. Suggett. The results obtained by this author were less satisfactory than those of Murphy. In some cases, the remedy failed entirely, although in others the beneficial effects were unquestionable. The dosage seems to have been small, and in concluding

his report Doctor Suggett says, "In future, I shall use much larger doses." It will be noted that Doctor Neiman uses 8, 10, and 12 grains at a dose.

Dr. Harry H. Schirrmann, in the same journal, reports the treatment of some 200 cases of syphilis with sodium cacodylate during two years, and he asserts that "results have never been so striking and really wonderful as in those treated with sodium cacodylate."

These reports briefly show a few of the experiences of those who have given this preparation a trial. From Murphy's *Clinics* for August, 1915, we learn that this authority's faith in this substance as a remedy for syphilis is as great as ever. He states that under sodium cacodylate, chancres heal much more speedily, as a rule, than under salvarsan-treatment, and he gives it as his opinion that, in such cases, "sodium cacodylate is the therapeutic agent of the future!" In describing a case of chancre of the tongue (see *Clinics*, August, 1915, page 579) he spoke as follows: "We instituted what we believe to be the best method of treating early syphilis, namely, daily injections of sodium cacodylate. I recently recommended salvarsan, but I have returned to my first love, which I originally suggested and used before we had '606'."

Undoubtedly the tendency is to use larger doses, and, in view of the relative nontoxicity of the drug and its very remarkable safety as compared with other arsenical preparations, there is no reason why physicians should not use it in the dosage recommended by Doctor Neiman (See p. 407), provided they go about the treatment cautiously and also alternate it from time to time with a course of mercurials.

It is interesting to know, in this connection, that Doctor Murphy now begins treatment with a gluteal injection (he does not inject sodium cacodylate intravenously) of 2 grains, to be repeated at the end of a week. If the patient shows no idiosyncrasy for the arsenic salt the dosage is rapidly increased to 5 grains daily. The ampules are employed. "We never mix it [sodium cacodylate] ourselves," he adds, "and never let the druggist mix it."

"Nothing is more beautiful," adds Doctor Murphy at another point, "than the healing of a chancre by sodium cacodylate."

The testimony of such a man as Murphy cannot be overlooked, and when he declares unequivocally, that this arsenical preparation is better than salvarsan, the profession is bound to be deeply impressed, particularly

since the price of the former is infinitesimal as compared with that of Ehrlich's arsenobenzol.

Worry, like hate, anger, envy, and all other depressing emotions, is a poison. It is a short circuit which burns out the mental batteries and destroys the power for useful activity.—Dr. J. H. Kellogg.

A FALSE DAWN IN MEDICINAL THERAPEUSIS

One of our contemporaries remarks that "in dyspnea, with very labored respiration, opium—or its combined alkaloids—gives better results than does morphine." Now, here, we thought, is a glimmering of sense. The next thing will be the suggestion to try out the twenty-six potent principles contained in opium, in order to ascertain which one of them is the agent that actually combats dyspnea.

But then the thought came: Why should either morphine or opium be given for relieving dyspnea? With very labored respiration? One would think the indication clear—remove any obstacle present that embarrasses respiration or increase the power of the lung and aid it in its "labored" efforts. Does morphine do either? Or can it do more than sedate irritated-nerve action—which hardly is present in such a case as described; or to smother the efforts nature is making to attract attention to a point that needs assistance?

Opium may act better than morphine sometimes, as the former is less sedative, besides possibly containing an excess, relatively, of the stimulant principles, such as thebaine and laudanine. But why take such chances, when we have in strychnine an admirable agent to increase the respiratory power?

The surgeon, ready to make an incision, sees at his hand scalpels, bistouries, straight and curved, sharp and probe-pointed. He does not hesitate to choose the one best fitted for the duty before him; he does not in dubitation gather up the whole bunch and seek to cut with all, rather than exercise his cerebration in making a selection of the fittest. Yet, that is exactly what we have been doing with our drugs—and our results deserve most of the derision they receive.

The greatest drawback to rational medicine today is the prescription. It is a relic of the medieval period of therapeutics, when doubt proceeded from ignorance and led to rashness. The commingled mass of drugs shot into the patient may or may not be followed by improvement; and we know not

whether any one or all the drugs were beneficial or were not. What folly—what insane stupidity!

Do not blame the advertising manufacturing chemists. True, they seek to reap a profit by mixing a lot of stuff, and telling us it is good for whatever ails our patients. But, is it not our own fault that we "fall for" such guff? If we do not know any better, then, pray, who does?

Here is an abnormal condition, a disorder of the function of respiration—dyspnea in which there is very labored respiration. What causes it, and can the cause be removed? What directly relieves the condition, aids the laboring organ, restores order? Aspidospermine? Then give it; give enough to counter-balance exactly the disease-agency and restore physiologic balance. Does aspidospermine fail? Then the diagnosis was incorrect, and the case must be gone over more carefully. We may find a cherry-stone in the bronchi—then what folly to medicate? We may find a spasmodic element in which case some antispasmodic agent is indicated: glonoin, for quick action; atropine, to increase and prolong the former's action; strychnine, to augment the systemic reaction toward the drugs, through increasing the irritability of the nervous centers. Here you have a logical prescription, one in which the action of each ingredient is known; and, while we do give three, each one serves a distinct, definite purpose.

But, if the man who prescribes opium is ready to defend his procedure, let him tell us just what action he expects to get from his morphine, codeine, narceine, thebaine, laudanum, papaverine, narcotine, cryptopine, or whatever the principle; also, their inter-reactions on each other, and how he recognizes the effect of each.

A good deal of the trouble of this world arises from the fact that some folks like to have gardens, while others prefer to keep hens.—Nixon Waterman.

THE WORK OF THE ARMY MEDICAL OFFICER

The army medical officer has two principal reasons for his official existence, the first being to keep the soldiers of his unit in good health and ready for any call; the second, to assist his commanding line-officer, in time of actual warfare, to reach the goal of the soldier, which is victory. All other purposes are subsidiary to these. The presence of the medical officer at the front assures a better morale among the soldiers in time of battle.

They can and will fight better when they know that there is at hand a body of trained men whose sole duty it is to look after their bodily welfare, and, during the actual contest, to search the field, find and care for the wounded, and take them from the peril and turmoil of the front back to the hospitals at the base.

Especially as regards efficiency at the firing-line has it been found better to train men for this particular work than to have the fighting soldier turn from his duty, responding in part to his own sense of danger, in part to his sympathy for a wounded friend, in order to assist the latter to make his way to the rear. What can an officer say when he finds a soldier carrying his own gun and assisting a wounded companion out of the danger zone. If he has the soldier's stern sense of duty, he will order the unwounded man to abandon his friend and return at once to the fighting line; but his sympathy is bound to be with the wounded soldier, this tending to make him perilously lenient.

The officer of the line has learned by the experience of many campaigns that it is greatly to his advantage to have a regularly organized unit of medical soldiers, whose definite duty it is to clear the front of the impedimenta caused by the presence of the sick, wounded, and dying. Aside from the humanitarian aspects of the work of these men, he knows that it is economically profitable to be able to locate the injured quickly, repair their wounds with the least possible delay, and return them to the front as soon as they are well enough to go.

The most expensive thing in an army is the trained soldier, and if each medical officer succeeds in saving to the army only five such men every year, he will more than have earned his average salary, since it costs more than one thousand dollars to convert a raw recruit into a trained soldier, and one such trained man is worth many raw recruits. To fail to provide medical officers in sufficient number to care for the bodies of the men of the army is as wasteful as it would be to buy an automobile, and for lack of skilled assistance be compelled to buy a new machine every time a tire bursts.

A few months ago (to be exact, in August, 1915), very severe criticism was made in the French Chamber of Deputies of the mismanagement of the army medical department in France. Early in 1914, prior to the war, the so-called Lachaud report to this chamber, made by its sanitary committee, showed that the medical work of this army was in a very

unsatisfactory condition, and an effort was made to correct this. Unfortunately, just at this time, the war came on and nothing was done. All this trouble was undoubtedly due to the fact that, anticipating the breaking out of the war, some 95,000 men were called to the colors for whom no corresponding medical provision was made. The direct result was a decided increase in the morbidity and mortality in the French service.

This problem was recognized, and in December, 1914, the so-called Freceynet committee was appointed by the president of the French republic. Reports were made in March and April, but these were not given publicity until October, 1915. These reports showed that from a sanitary point of view the French medical service was very unsatisfactory. There are reasons to believe that the exposures made during the acrimonious debate of July, August, and September, 1915, were, to some degree at least, the cause of the fall of the French ministry in the fall of 1915.

The importance of adequate medical attention has been fully appreciated, likewise, by the British government, which has experienced great difficulty in securing medical officers enough to man its rapidly developing army, and it has only succeeded in doing so by stripping large parts of the civilian population of their medical men.

The Surgeon-General of the United States Army, in his last report, asked for an increase of personnel sufficient to provide seven medical officers for each 1000 enlisted men. He has shown Congress that at the present time he actually employs a percentage of medical men amounting to 6.8 percent for each 1000 enlisted officers, and he has made it clear that he is decidedly short of medical officers. It is well known that in addition to the regular, active medical personnel a considerable number of officers of the Medical Reserve Corps are constantly employed to eke out the actual requirements even in time of peace. It may be imagined how great would be the handicap should any large body of troops be called into active service.

Every physician in the United States should interest himself in the medical needs of our army. This army is to be increased—just how much we do not know; but, whatever its size, the medical profession of America should insist that adequate provision be made to care for our soldiers not only in times of peace, but also as a part of the general program of preparedness for any possible war.

The eye and mind of the layman are naturally enough fixed primarily upon an effective fighting force, but the people should not be allowed to forget that back of that force and absolutely necessary for its efficiency, for its comfort, and for its repair and renewal in time of war, there is a quiet, finely educated, highly efficient body of men, whose names do not appear "in the dispatches" as the winners of victory, but who, nevertheless, contribute more to the achievement of victory than do the majority of men who lead companies, regiments, divisions and armies into action, and who, therefore, get the opportunity to pass as heroes.

There can be no question that many crimes, multitudes of suicides, great numbers of divorces and other social calamities may be rightfully regarded as among the natural results of neurasthenic conditions. Probably more than one poor fellow has been sent to the gallows by a judge who was suffering from a fit of neurasthenia. Wars have been declared and rivers of blood have flowed to satisfy the whims of neurasthenic kings and queens.—Dr. J. H. Kellogg, in "Neurasthenia."

RELIGIOUS PROSTITUTION OF OLD

Lee Alexander Stone contributes to *The Urologic and Cutaneous Review* a paper entitled "The Prostitute: An Ethnological Study." In this essay Doctor Stone describes the custom, that prevailed in Babylon, Lydia, Syria, Greece, Egypt, Carthage, and to some extent in Rome, of women serving as public prostitutes at the temples, as a religious duty. This custom Doctor Stone attributes to the desire of the priests to remedy the evils resulting from endogamy, or intermarriages limited to the clan or tribe. Seeing the degeneracy springing from such intermarriages, the custom of temple-prostitution arose, in order that the unions with strangers might revivify the failing gens.

This explanation will scarcely stand in the light of history. It is not at all likely that any such knowledge was possessed by the priesthood of any land in those days. The close limitation of political privileges to those born of free parents of pure blood was too general; as in Greece, where the admission of outlanders to citizenship was an event rare enough to be notable, and only exercised on such occasions as that of the refugees from Plataea after the destruction of their own city.

The unanswerable objection, however, is the fact that it was not girls alone who were thus utilized at the temples, but boys as well—pederasty being common then as now in the Orient, that is, Asia Minor and its neigh-

boring lands. But this could hardly have been for the purpose of improving the breed by crossing, nor for any but the simple and obvious reason, namely, for the benefit of the priesthood. These boys were known as kadesh or kadosh—consecrated—and we always are overcome by a queer sensation when we see some lodge or association taking the name of Kadesh. We once asked a member of one such what was the meaning of the name, and he replied, "Consecrated"; but, to what, he knew not. Just as well.

The true reason for this custom of religious prostitution was merely that the priests of Astarte, or Ishtar, at Mylitta, knew that in no other manner could they as readily attract to their temples as certain and generous an income as by providing for the sexual wants of strangers. That, on the part of the women, it was a religious duty, a sacrifice to the gods, commended it to their sex the more, for women are ever ready to respond to the call of their faith. Nor was it deemed objectionable to the men, who willingly permitted that sacrifice and did not consider it degrading.

We must not make the mistake of assuming that people living in those faraway times possessed the same thoughts, ideas, beliefs, and prejudices as we do at this late day. Even now, it is only in America that the honor of woman is looked upon as so precious a thing that its forcible violation is punished by death, immediate and without trial. Elsewhere, even in the most cultured communities of Europe, men are disposed to look more philosophically upon such occurrences.

Priestly greed was the only reason for the introduction of this custom. The degeneracy from inbreeding is but a question of our day and of the most modern observation. Egypt, whose civilization was the parent of most of the oriental religions, whose influence is manifest in Judaism as it is in Christianity, maintained for forty or possibly sixty centuries the custom of marrying her rulers to their sisters. Her dynasties did not require renewal more often than in other countries and ages; and so solicitous were her sages to preserve the royal blood, that a successful usurper immediately took steps to legitimize his race by marrying a female of the previous dynasty and making her sons his heirs.

We can not agree with Doctor Stone in crediting the priests of Mylitta with any such biologic wisdom as he implies, or with more than a very accurate knowledge of humanity; but they were possessed of excellent financial acumen. It is not without

reason that the temples of paganism are the only memorials of the life of their peoples, that were so massively built as to defy the ravages of time, and man, and the elements. The homes of the subjects and the palaces of their kings, the warehouses of the merchants and the vessels of the mariners have fallen to dust; the revenues of the priests alone were sufficient to erect such enduring memorials.

When you come to Chicago for that long-planned postgraduate course, remember that our latchstring is out. Make the pilgrimage to Ravenswood.

PRACTICAL POINTERS FOR MAY

A hypodermic dose of apomorphine usually diagnoses and cures the convulsions of children not due to fever.

Summer is coming with its colics and diarrheas. Don't these words suggest the sulphocarbolates—and the infants' anodynes?

To soften impacted ear wax, a solution of sodium bicarbonate in warm water (about 100 to 110° F.) acts very nicely in most cases. Use the ear syringe.

Some forms of dysmenorrhea, according to Novak, are relieved by sodium citrate, which it is claimed reduces the viscosity of the blood and alleviates the pain of expulsion.

Precordial pains always demand close investigation. Relieve these pains with glonoin or atropine, or, better still, by both, the first being given to produce quick action, the latter to prolong it.

Atropine is the indicated remedy in spasmodic dysmenorrhea. Give 1-100 grain two or three times a day, beginning two or three days before the period and continuing until the flow is well established.

Gray declares that measles is most contagious at the time of the appearance of the rash, but may be transmitted as early as five days before this time. Its transmissibility does not extend beyond seven days following the skin eruption.

After experimenting extensively on cats, Martha Wollstein reaches the conclusion that mumps is probably due to a filterable virus. Whether this virus contains a microorganism or not has not been ascertained. See *Journal of Experimental Medicine* for March.

Obstructive dysmenorrhea—in which pain ceases as soon as the flow is well established—is relieved, according to F. B. Block (*American Journal of Obstetrics*) by the insertion of a stem pessary, or by any other means indicated for the removal of the obstruction.

Ellingwood says that in the amenorrhea of young girls, and in that form induced by

exposure to cold, he obtains excellent results from the use of polygonum (water-pepper). Ten to twenty drops of the specific tincture are administered every two to three hours in hot water.

Bacterin treatment is being used with good success in the treatment of sciatica. Search for some point of focal infection. Occasionally it will be found in an infected bladder or an inflamed prostate. Zapffe cured a case with a bacterin made from staphylococci and a diphtheroid bacillus found in the urine.

Cruz reports a case of rheumatic iritis recurring every winter for twelve years in a man 35 years old, and which resisted anti-rheumatic remedies and local applications. This case yielded readily and permanently to the internal use of aconitine. (Reported in *Revista de Medicina y Cirugia Practicas* for January 7, 1916.)

In treating severe and extensive burns, try immersion of your patient in a bath containing 1-8 to 1-4 pound of sodium bicarbonate. The temperature of the bath should be raised for subnormal temperature and shock, or lowered for pyrexia. This treatment, declares Herrick, in *The New York Medical Journal*, is unequaled.

The "rheumatics" will drop in on you this month. Are you ready for them? Much can be done for their relief. Examine the teeth, the tonsils, the prostate, and the alimentary canal; give bacterins that "fit"—the streptococcus is usually the trouble-maker; and do not forget the alkaline-eliminative treatment for the associated acidemia.

Do you know that there is a test by which it is possible to determine a person's immunity to diphtheria, and that about 80 percent are naturally immune? This is the so-called Schick reaction, obtained by injecting a small amount of carefully diluted diphtheria toxin under the skin. Eventually this test will be applied to every person exposed to diphtheria. Why not now?

Have you a troublesome case of urticaria? Remember that it is now believed that this condition is due to proteid decomposition and the formation of the toxic histidin by-product, betaimidazolylethylamin. Put your patient on a vegetable diet for two weeks, purge daily with a saline laxative, and if the disease shows a tendency to persist, try small doses of pilocarpine.

A variety of bacteria may cause summer diarrhea in children: for instance, the dysentery (Shiga-Flexner) bacillus, the gas bacillus, streptococcus, bacillus proteus, and the ba-

cillus capsulatus. Whatever the cause, lactic-acid treatment seems to be effective. This is especially true if the gas bacillus is present, as is practically always the case in bottle-fed babies. Order tablets containing the bacillus bulgaricus.

Richardson (*Boston Medical and Surgical Journal*, Dec. 23, 1915) believes that it is a pernicious custom to give castor oil to clean out the intestinal tract prior to surgical operation. The castor oil is not only an intestinal irritant, but it tends to produce postoperative intestinal stasis, facilitating gas accumulation. Doctor Richardson believes it more rational to give a saline cathartic or Russian oil, followed by a cleansing enema.

A diagnosis of pregnancy may now be made by an examination of the urine, according to a method devised by Kiutsi and Malone. The technic has been improved by Knerr (*Jour. Mo. State Med. Assn.*, March, 1916). In this test the urine is examined according to the Abderhalden method to determine the presence or absence of placental enzymes. Knerr declares that he examined 200 urines by this method, with practically no failures. Others have not been so successful.

A southern physician wants "the best remedy for pellagra." There is no "best," but we suggest the following: Goldberger's high-protein and corn-restricted diet; hypodermic injections of sodium cacodylate every two to seven days; bowel regulation with petroleum-emulsion—a delightful emollient; intestinal antiseptics by means of the sulphocarbolates; picric-acid solution, 1-2 to 1 percent, applied to the eruption and used as a gargle; saturation with calcium sulphide; and quinine hydrobromide for its tonic effect. Don't try to give every patient all these remedies at the same time!

Salvarsan and mercury are used in association by the best men in the treatment of syphilis. First, a generous injection of the "606," with mercury following; then a second dose of salvarsan after a week or ten days, and more mercury; then a third dose of the arsenic in about a fortnight—and still more mercury. Mercury bichloride or protiodide may be given by the mouth at first, but intramuscular injections of mercury salicylate (which may be made nearly painless by combining with novocain) are more popular for later administration. This mercurial may be administered at weekly intervals for five or six months or longer. Tertiary and parasyphilitic cases require iodine saturation—calx iodata.

Leading Articles

The Injection Treatment of Hemorrhoids*

By ARTHUR S. MORLEY, F. R. C. S., London, England

Temporary Assistant Surgeon to St. Mark's Hospital for Cancer, Fistulae and Other Diseases of the Rectum

INTEREST in this valuable method of treating internal hemorrhoids was re-awakened about a year ago by an article by Sir James Goodhart,¹ in which the advantages of this treatment were extolled and a lurid (not to say biased) glare was thrown upon the evils of the more radical operative treatment, stress being laid upon the occasional failure of the latter. A subsequent series of articles² by various rectal surgeons served to put the advantages and disadvantages of the two methods of treatment into a truer perspective.

In spite of the prominence given to the subject in this way, I find that the majority of medical practitioners are still ignorant of the fact that there is such a thing as the treatment of piles by injection; that the general belief is that the mild cases of piles are to be treated palliatively by local applications, laxatives, diet, and the like; and that when a patient's life is made a misery to him in spite of this treatment the only thing left for him is operation—a proceeding of which the average patient has a quite disproportionate horror.

Since I have had the advantage of acting as surgeon to out-patients at St. Mark's Hospital at the beginning of the war, a very large number of cases of hemorrhoids of all degrees of severity have passed through my hands. At first I practiced injection only on what may be described as medium cases, in which there was very moderate and occasional bleeding, slight prolapse which was spontaneously reducible, slight pain during defecation, and the like.

The number of beds at the hospital is very limited, and the war has caused increased pressure upon them; the result was that the list of hemorrhoid-cases awaiting admission was of considerable size, and many cases that I had considered needed operation were wait-

ing, sometimes, months for a bed, and were suffering from perhaps moderately severe hemorrhage week after week or from other troublesome symptoms which ordinary "palliative" treatment failed completely to relieve.

Advantages of the Injection-Cure

I was led by this to try the injection-treatment on more severe cases, and found that in an enormous majority of them all symptoms ceased like magic after a few injections, although in the more severe cases the piles were still seen on examination with the sphincteroscope. Still more surprised was I to find that in very many cases, which I had previously thought obviously needed radical operation, not only did the symptoms disappear, but no trace of the piles could be found on even the most careful visual and digital examination.

Thus it happens that for a very considerable time I have been treating a large number of cases by injection, and have been extremely pleased with the results; and so have the patients, especially those who had come to the hospital for admission and operation after months or years of palliative treatment of other kinds.

The treatment, however, is by no means a new one, and I claim not the slightest degree of originality for it. It was first brought to the notice of surgeons in this country [England] by Mr. Swinford Edwards in 1888, but though it has been employed by him and by a few other rectal specialists since that time it has never become very generally known either by the rest of the profession or by the public.

The little operation requires a considerable degree of practice to perform properly; the cases need a certain amount of selection (indeed, a very great degree of discrimination must be employed if one is going to promise a long degree of immunity to the patients); it also needs a few special instruments, and, above all, a very good light. With these

*Reprinted from *The Lancet*, March 18, 1916.

¹Practitioner, December, 1914.

²Ibid., March, 1915.

will produce a very decided amount of swelling and inflammation and, consequently, of pain.

Before making the injection, the piles may be sponged over with a little weak biniodide of mercury or a 1 : 50 lysol solution, which should be at once mopped up with a dry swab, to prevent risk of absorption. It is a good plan also to touch each pile, at the spot where it is intended to inject it, with a drop of pure [full-strength] carbolic acid. This renders any chance of introducing infection from the mucous membrane negligible (I have never heard of infection occurring even where this precaution is not adopted), and also renders the point anesthetic, so that even the needle prick is not perceived.

The needle may now be inserted through the carbolized spot. The surgeon should endeavor to enter the needle in the spot indicated on the two lateral piles by a cross in the diagram (Fig. 3). It should be pushed up along the long axis of the pile to near its base; usually this means entering the needle to the shoulder of the shaft, that is, to its full length. The lowest pile should always be injected first, so that any bleeding which may occur shall not obscure the other piles. The solution is then slowly injected in the quantity deemed advisable.

The needle is not withdrawn at once, but should be allowed to remain in position for some thirty seconds, until the pile has commenced to swell and has become blanched. If this precaution is omitted, there will be a good deal of bleeding as it is withdrawn and the bulk of the carbolic solution will be washed away by the blood.

If any of the piles are of large size, it is well to make a second injection into the base of the pile, by entering the needle in the transverse axis of the pile and injecting 2 or 3 drops of the carbolic solution as nearly as possible into the center of the base of the pile. Each pile is treated in turn in the same way.

Finally, the blood is mopped away with a sterile swab, and the "operation" is complete. The whole proceeding does not take more than two or three minutes to carry out.

The After-Treatment

The patient should be warned that the piles will swell up, and are likely to prolapse, at first, more than before. It is of the greatest importance that they should not be allowed to remain down, but that they be at once gently reduced, otherwise there is a risk of their becoming strangulated and sloughing. The patient should be instructed,

therefore, to keep quiet, if possible in bed, for the first twelve to twenty-four hours, and to wash the piles at once with cold water, should they prolapse, and then to grease them well with vaseline or some simple ointment and gently press them back. This is the only after-treatment required, excepting that some simple laxative, such as confection of senna and sulphur, is advisable.

For working-men or those with important business to attend to, it is not absolutely necessary to lie up at all, and, if the injection is made in the evening, the patient may quite safely go to work or business on the following day—but he then should be told not to take unnecessarily strenuous exercise.

After five to seven days, the piles which have been injected will have shrunk markedly and eventually will be converted into mere fibrous ridges, which may be felt on digital examination. If sufficient carbolic acid has not been used, this process will not be complete, and a second injection may be made after the expiration of from four to seven days. Where the piles are large, I have found that as many as four or five injections at weekly intervals may be required, but as a rule two or three are sufficient.

Some Incidental Points

Frequently, after the piles which have been injected first have shrunk, other smaller piles, which were concealed before, come into view, and these should be injected also before the patient is dismissed.

In practically every case, the bleeding of which the patient has been previously complaining is stopped from the very first, and in most cases the prolapse also disappears within two days of the first injection. As one patient put it to me recently, "I feel a hundred percent better."

In quite numerous cases of inveterate pruritus, I have found a few small hemorrhoids on careful examination with the speculum, and after these have been injected the pruritus has disappeared—apparently for good. I believe, therefore, that this little point might be borne in mind: that the injection of any piles that are present be tried before even contemplating the recommendation of any of the more severe operations for pruritus (such as Ball's operation), which, I believe, are often resorted to before a real attempt has been made to ascertain and remove the cause of the pruritus.

A Warning

Lockhart Mummery has recorded a case in which he unwittingly injected some hemor-

rhoids in a *hemophiliac*, with the result that rather dangerous hemorrhage occurred. This experience must be almost unique, but the possibility of such a misfortune should be remembered. With this sole exception, I know of no case in which the injection of

piles has given rise to any dangerous complications; and, while I do not by any means go as far as Sir James Goodhart, I certainly do think that injection might be employed far more frequently, and operation less frequently, than is at present customary.

Vaccine- and Serum-Therapy in Everyday Practice

IV. Autogenous and Stock Bacterins; Combined Bacterins

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from page 373, April issue.]

FIRST of all, in order to avoid confusion, let us define our terms, viz.:

An *autogenous bacterin* is one prepared from the particular strain of bacteria isolated from the lesions of the individual in whose case the resulting bacterin is to be employed.

A *stock bacterin*, on the other hand, is one made from bacteria of the same species as those causing the infection against which the bacterin is aimed, but obtained from a source or sources other than the lesions of the patient to be treated.

Theoretically, the freshly prepared *autogenous* bacterin should be the ideal one; however, in actual practice, this is not always so, and this for various reasons.

First of all, it is often difficult, or even impossible, to secure cultures of the specific microorganism responsible for the pathologic condition to be treated.

Secondly, while waiting for an autogenous bacterin to be prepared, extremely valuable time is lost, especially in acute infections—the very diseases in which bacterin-therapy is likely to do the most good. Very often time is the vital factor, and death or irreparable damage may result while one is waiting for the autogenous bacterin.

Practical Advantages of Stock Bacterins

One of the great advantages of using *stock* bacterins in acute infectious conditions, such as tonsillitis, pneumonia, grip, scarlatina, arthritis, is that, because of the availability for prompt administration of the preparations kept readymade on hand, complications and sequelæ become relatively rare; whereas, if one is compelled to wait for the preparation of an autogenous bacterin, irremediable damage may already have been done before the bacterin becomes at all available.

The longer I practice medicine, the more I am surprised at the number of permanently crippled hearts, kidneys, middle-ears, and joints coming under my observation too late to be benefited appreciably by any form of treatment. And it is my experience that most of these sad conditions are attributable to failure or delay in applying specific treatment for the acute conditions just referred to. During the five years or more in which I have been employing the bacterins almost daily in these acute conditions, complications and sequelæ have reached to near the vanishing-point. It is for this reason, as much as for any other, that I tell all my patients that I use the bacterins in acute infectious processes, as I am doing.

Furthermore—despite the oft-repeated *ex cathedra* statement, that “pneumonia is a self-limited disease, running a definite course, not favorably influenced by any known method of treatment”—if you persistently employ stock bacterins (and of course in connection with the proper active-principle medication) *early* in the course of all those cases exhibiting all the clinical (and bacteriological) signs of a beginning pneumonia, you will have the satisfaction of seeing many, if not most of them, “aborted” or “jugulated” within a surprisingly short period of time. True, you will quite likely find it a hard task to convince the scoffers at the employment of stock bacterins that these really had been cases of true pneumonia, because you did not allow the disease to run long enough to develop all the classical symptoms; but, would they not have been *typical* cases of pneumonia had you not interfered?

After one has employed this line of treatment for a few years, he will certainly find that the number of “typical cases” of pneumonia occurring in his own practice has

greatly diminished. *An honest trial will not fail to be convincing.*

Again, in infections, the bacteriologic picture is constantly changing, and new factors may enter into the case before an autogenous bacterin is ready. It is a fact well known to bacteriologists that, when once a given variety of pathogenic bacteria gains entrance into the body in sufficient numbers to break down the resistance to the infection, the door is opened to a veritable horde of other invaders, so that not infrequently the original offenders will quickly become outnumbered. It then becomes a difficult task to decide which is the real causative agent.

The preparation of bacterins requires special training and also many kinds of particular laboratory paraphernalia. With neither of these essentials is the average practitioner of medicine equipped; consequently, he must depend upon the services of some dependable laboratory for his autogenous bacterins; and such a laboratory is quite likely to be too far away to permit of quick service. So, the man in general practice must perforce fall back upon stock bacterins, a sufficiently varied assortment of which he can keep on hand at all times to meet the great majority of acute infectious processes encountered.

Another item worthy of consideration is, that the cost of autogenous bacterins is such as frequently to make their use prohibitive; whereas, the cost of a dose of a stock bacterin compares favorably with that of dependable drugs.

In many (perhaps in most) cases, the clinical picture is so clear that a properly selected polyvalent stock bacterin is plainly indicated, and here a carefully made stock bacterin, if from a reliable laboratory, is undoubtedly likely to do as well as, or even better than, an autogenous one hurriedly prepared on short notice.

Professor Madden, of the Egyptian Government School of Medicine (London *Lancet*, Aug. 7, 1915), writes as follows:

"In certain conditions, particularly in septic conditions and lobar pneumonia, stock vaccines may be used. We are here dealing with conditions of known and definite bacteriology; and, as stock vaccines are prepared from many different strains, one is almost sure to have among them that particular variety (strain) of the organism present in the lesion under treatment, and thus we secure the curative effect of its special vaccine. . . . In cases of indefinite etiology, an autogenous vaccine is to be preferred, as

in its preparation the true causal organism or group of organisms is isolated and grown, and a more potent and direct vaccine made available."

Illman and Duncan (*N. Y. Med. Jour.*, June 27, 1908) declare that "in the majority of cases, stock vaccines are just as efficient as autogenous vaccines."

Cole and Meakins (*Bull. Johns Hopkins Hosp.*, June-July, 1907), in referring to their use of stock gonococcic bacterin, write:

"It has been held by some writers that certain strains of the gonococci are endowed with special powers in the production of opsonic immunity. Our experience has been quite to the contrary. The vaccines used by us were prepared from four different strains of gonococci. In comparing the results obtained, no distinct difference could be demonstrated in the clinical results or the effects on the opsonic index when the patient was vaccinated with a vaccine made from his or her own organism or when a different vaccine was used."

Hamilton and Cooke (*Jour. of Infect. Dis.*, Mar. 30, 1908) say: "Better results are obtained by the use of strains which have been grown for a long period on artificial media than by the use of freshly isolated strains, and there appears to be no advantage in using the patient's own organism." These writers have treated a large number of cases of gonorrheal vulvovaginitis of children with gonococcic bacterins.

Hartwell and Lee (*Boston Med. & Surg. Jour.*, Oct. 17, 1907) have used, with success, stock staphylococcic bacterins, at the Massachusetts General Hospital, in the treatment of furunculosis, carbuncle, and septic wounds, and they say: "We have found that it is not necessary to prepare an autogenous vaccine, but that these cases do equally well when treated with a stock staphylococcus-aureus vaccine."

Another writer declares as follows: "Stock vaccines have been found equal and sometimes superior to autogenous vaccines in the treatment of infections due to staphylococci, the gonococcus, and to the tubercle-bacillus, and for the prevention and treatment of typhoid fever; they are also useful in the treatment of many infections caused by the colon-bacillus, the streptococcus and the pneumococcus."

Some authorities who advocate the use of stock bacterins point out the fact that immunity against smallpox is produced by stock vaccines; also that tuberculins are

stock bacterins; yet, no one questions their efficacy.

The splendid results of Trudeau, Baldwin, Lawrason Brown, and others in treating tuberculosis with "tuberculin R" and "bacillen-emulsion" (stock bacterins), without taking the opsonic index, amply testify to the value of stock tuberculin, and also go to prove that the opsonic index is not essential to successful bacterin-therapy.

Why Failures?

Failure of autogenous bacterins to produce satisfactory results is no doubt often due to the fact that they are used as a last resort, owing to the difficulty or unavoidable delay in their preparation.

In chronic infections, when a patient has harbored a given germ for a long time, it appears that a mutual tolerance develops between the bacteria and the tissue-cells. The germs adapt themselves to their environment, modifying their characteristic qualities, the better to resist the attacks of the antibodies produced by their host's immunizing mechanism; and the tissue-cells also adapt themselves to the invading bacteria.

In such a case, an autobacterin is liable to evoke little or no immunizing response (antibody production); the system has become so habituated to and tolerant of this particular strain of bacteria that the autobacterin fails adequately to stimulate the immunizing mechanism. When a stock bacterin prepared from a vigorous, typical strain or strains of the disease-producing microorganism is employed, a powerful impulse to immunoproduction is given, with corresponding curative effect.

As a result of these studies, then, we decide that the advantages of stock bacterins greatly outweigh those of the autogenous variety, and that, in the great majority of cases, satisfactory results follow the employment of the stock preparations. In any case, it is well to begin treatment with a reliable stock bacterin, of polyvalent strain; then, if a satisfactory immunizing response does not follow, resort may still be had to an autogenous preparation. Also, where there is reasonable doubt as to the bacteriologic diagnosis, or where the bacteriologic picture is very complex, as in pyorrhea, chronic otorrhea, resistant cases of chronic urethritis, bronchitis and asthma, in chronic infections of the accessory sinuses, kidneys, and bladder, an autogenous bacterin is often indicated.

In infections, and particularly in chronic infections, we rarely find the causative bac-

teria in "pure culture," that is, unmixed with other varieties of pathogenic microorganisms.

It appears that the human subject is the unwilling host of a great variety of bacteria that are pathologically inactive as long as the bodily resistance against infection remains at or above par.

Now, let one species of pathogenic bacteria gain a foothold, the bodily resistance immediately is lowered and the door is opened for other "malefactors of minute dimensions"; and a *mixed infection* results. For example, take lobar pneumonia; while the pneumococcus is, without doubt, the true etiologic agent in practically all cases of this disease, we usually find the streptococcus associated with it in large numbers; and who shall say that the latter germ is not responsible for a share of the patient's symptoms? Then, again, in pulmonary tuberculosis, it is the streptococcus, pneumococcus, and staphylococcus that are responsible for the fever, night-sweats, and rapid wasting of the tissues.

To give one more illustration, take pustular acne. Here, we find the acne-bacillus and the staphylococcus albus jointly responsible for the pathologic condition. Treatment directed at one variety of germ in these cases of "mixed infection" will not effect a cure; so, "mixed," or "combined," bacterins have been devised, the better to meet the requirements of the case.

Combined (mixed) bacterins should be given where mixed infections exist; and, if a mixed bacterin should be administered in an infection in which some of the germs represented in the bacterin are not present, no harm will follow. Mixed bacterins are not antagonistic in effect like incompatible drugs; hence, they cannot logically be compared to "shotgun" prescriptions. They merely stimulate the immunizing mechanism to the elaboration of antibodies antagonistic to the various bacteria represented in the bacterin, without regard to whether or not a corresponding infection exists.

On Prophylactic Immunity

Interest in the possibility of prophylactic immunization against two or more infectious diseases simultaneously and the treatment of mixed infections by means of mixed or combined bacterins has been greatly stimulated during the past few years by the researches of Castellani (of the University of Naples), Wright, Hitchens, and Allen.

Castellani last year presented (*Brit. Med. Jour.*, May 2, 1915) a summary of his laboratory and clinical evidence of the value of

combined bacterins for simultaneous immunization against Asiatic cholera, bubonic plague, Malta fever, typhoid and paratyphoid fevers, and similar combinations of other bacterins, for use as indicated by the endemic or epidemic occurrence of various infectious diseases. His work demonstrates that with combined bacterins large numbers of persons in military or civil life may be immunized against many of the more important infectious diseases by two or three injections of a combined bacterin; that such inoculations are harmless; that the reactions are not more frequent or intense than those following the administration of a single bacterin; and that antibodies are produced for each of the varieties of microorganism represented in the bacterin. Castellani's combined bacterin against cholera, typhoid fever, and "paratyphoid fever A and B" has been extensively employed by the Serbian Relief Commission, over 120,000 doses having been administered, without harmful result.

Sir Almroth Wright has recently brought into general use in the armies of the Allies a combined "asepsis vaccine," of which more than a half-million doses have been injected.

A combined bacterin similar to that of Wright's was first advocated by Van Cott, in 1909, and was extensively employed by Polak and by himself at the Long Island College Hospital in cases of puerperal sepsis, with remarkably good results. This "Van Cott mixture" is now extensively used by many surgeons and obstetricians as a prophylactic measure prior to abdominal operations, and also either before or at the time of obstetrical delivery.

Allen, who originated the method of immunizing against and treating infections of the respiratory tract, claims that insufficient polyvalency is to be blamed if results are not satisfactory. He states that a combined bacterin requires no reduction in the doses of its several constituents.

Head and Brown, after a study of the bacteria found in pyorrhea, adopted and successfully used a combined bacterin for this condition.

A. G. Huegli (*N. Y. Med. Jour.*, Apr. 24, 1915) says: "When I am called to a puerpera who shows a high fever, I do not hesitate to inoculate her immediately with a vaccine containing the various possibly offending germs; experience has taught me that I can depend upon a rapid recovery, and I never regret not having found out whether her condition was due to the streptococcus or the colon-bacillus, or, in fact, not having had it

scientifically demonstrated by culture-tubes that she really had a puerperal sepsis before I treated her. It suffices for me that such scientific curiosity might have involved the signing of a death-certificate."

My own experience has taught me, as will be detailed further on, that, when we consider separate disease entities, in such cases as that described by Huegli, no time is to be lost, if the unfortunate woman is to have a chance for her life or at least to be saved either from a pelvic operation or a life of invalidism. There is no time here for the preparation of an autogenous bacterin or even for a bacteriologic diagnosis; one thing is urgently indicated, and that is the administration of a combined polyvalent stock bacterin containing the streptococcus, staphylococcus albus and aureus, colon-bacillus, and perhaps the pneumococcus. This, repeated at two- or three-day intervals, in conjunction with other remedial measures to be given in detail, at the proper place, in a later paper of this series, seldom fails to effect a speedy recovery.

Why Immunity is Produced by the Dead Germs

In concluding our general survey of the subject of bacterin-therapy, let us consider one question we have failed to touch upon before, namely, Why employ dead bacteria (bacterins), when virulent living germs have failed to call forth the production of immunity?

The answer seems to be that live virulent pathogenic bacteria retard or even actually inhibit antibody production, thus tending toward a fatal termination, rather than to recovery.

Killed pathogenic bacteria (bacterins), on the other hand, have lost their power to produce disease and their entrance into the system, by therapeutic inoculation into healthy tissues, results only in abundant antibody production. Killed microorganisms do not possess the property of elaborating ferments capable of digesting live tissues, and, consequently, do not possess the destructive influence or devitalizing properties that are characteristic of virulent living bacteria.

For this reason, killed germs are more effective for antibody production than are the living, virulent organisms; and clinical experience demonstrates that this principle holds good as well during the course of an infection as when bacterins are employed for prophylactic purposes.

Bacteriology of Infections in General

Whenever it is possible to make a bacteriological diagnosis from an examination of

pus, sputum, or discharges, this certainly should be done; however, for obvious reasons, this is often impracticable, in which case we must depend upon our knowledge of the bacteria most likely to be at the foundation of the particular infectious condition with which we happen to be dealing. For example, in infections of the skin and its appendages, the bacteria commonly involved are the pyogenic cocci, namely, the streptococci, staphylococci, and sometimes pneumococci.

In infections involving glandular structures, as in tonsillitis, adenitis, and the like, we expect to find the streptococci, and sometimes the staphylococci.

In *acute* infections of the respiratory tract, we commonly find the pneumococcus, streptococcus, the various staphylococci, and sometimes the influenza-bacillus. In *chronic* in-

fections of the same region, we are very likely to find, in addition to the foregoing, the micrococcus-catarrhalis group and the pneumobacillus of Friedlander.

In infections involving the digestive system and peritoneum, the most common infective agents are the streptococci and the colon-bacillus, with sometimes the staphylococci.

In infections of the genitourinary tract, the gonococcus, colon-bacillus, staphylococcus albus, and various diphtheroid organisms are commonly found.

The foregoing paragraphs briefly cover the *general* bacteriology of infections and point the way to the proper combined ("mixed") bacterins. The specific bacteriology of each disease will be taken up as we consider the treatment of individual infections, in succeeding papers.

[To be continued]

The Intravenous Use of Sodium Cacodylate in Syphilis

By L. A. NEIMAN, M. D., Brooklyn, New York

IT APPEARS to me that arsenic in the form of sodium cacodylate is finding comparatively little application in the treatment of syphilis—possibly for the reason that it is not generally known that this salt may be given in comparatively large doses without producing toxic effects. Indeed, I know from personal experience that a suitable amount of this cacodylate may be administered intravenously with less trouble than salvarsan, while evoking no apparent reaction on the part of the patient.

Now that salvarsan is hardly procurable, and then only at a price entirely out of the financial reach of most of our patients, it may be of some importance to become familiar with an arsenical preparation that promises to vouchsafe clinical results equal to those from the customary though more expensive arsenical compound.

It seems certain that arsenic, if not curative, at least is useful in the treatment of syphilis; and, further, that it is not the particular form or combination of arsenic that produces the favorable effect, but rather the arsenic content in any salt or compound. Hence, my plea for the more extensive use of sodium cacodylate, a salt that may be given in doses the arsenic content of which is as

great, or greater, than that of the more popular form in use today.

It is my practice to administer sodium cacodylate by the intravenous route, since this occasions little or no pain and absolutely no discomfort after administration, as do the subdermal and the intramuscular injection. Then, also, it seems to me about as easy to give an intravenous injection as a subcutaneous one.

In such a course of treatment, I begin with 3-grain ampules; then, if no systemic or toxic effects are observed, I increase the dose to 5 grains after about five or seven days. Again observing no untoward effects, I inject a dose of 7 grains in five or seven days, then continue this same (7-grains) dosage until altogether 10 such doses are given. After that I increase to 8, to 10, and then to 12 grains per dose, at weekly intervals.

Arrived at this point, I give my patient a rest from the arsenical treatment, but I continue with the mercurial course, which was given at the time with the sodium-cacodylate administration. After a month of rest, I resume the cacodylate for ten or more doses, together with the mercury. Then after a period of one month without any treatment, I make a Wassermann test.

If the latter should prove positive, I resume the former treatment, as described. On the other hand, if the test proves negative, then a Wassermann test is made regularly at intervals of three or four months.

In giving intravenous injections, the contents of the syringe should not be thrown rapidly into the vein, but injected slowly, so as to consume about two minutes in the procedure.

Scientific Medicine: What It Means. Does It Pay?

By E. R. RASELY, M. D., Morristown, Pennsylvania

THIS paper is not written as expressing the standpoint of the exceptional man who enjoys exceptional opportunities; rather, it is meant to take the position of the average physician who practices in the average town; who is bucking the world alone, without any hereditary competency to back him up or friendly influences of "graft" or special privilege to float him on. Perhaps it will apply to larger towns and country districts as well.

All medicine is scientific, and increasingly so. There is a surface manner of practicing medicine that may be scientific so far as it goes. I do not here intend to decry this, for I am of the opinion that it does pay. Neither will I defend it, for I hold no brief for it. What I want to be known and understood as my meaning of scientific medicine is that practice that takes into account all of the modern methods of diagnosis.

We often hear the word "scientific" bandied about by speakers having but a vague idea as to its meaning, as for instance: scientific research, scientific mechanism, scientific spirit, even scientific sport. What, after all, is science? "Science is concentrated common sense; the crystallized, reasoned wisdom of the ages." Thus, then, I shall view scientific medicine as the crystallized, reasoned medical wisdom of the ages.

What Scientific Medicine Means

It means first, and above all, diagnosis—accurate, positive diagnosis.

In my college days, Professor Garrettsen had a series of favorite questions that he delighted in impressing upon his students. They ran in this wise: "Gentlemen, what is the first essential in examining a patient?" The answer was, "The diagnosis." "And where do we get the diagnosis?" was the next question. "From within ourselves," was the answer. "And, after the diagnosis,

what?" "The treatment." "And where do we get the treatment?" "From the books."

Without diagnosis, we can not have prognosis nor treatment, any more than an automobile can be prognosed as to its ability to run or to be repaired, when out of order, if the mechanic will not take the time and use brains sufficiently to look over the ensemble and examine the machinery.

Diagnosis Means Study and Taking Time

Diagnosis means study. We are in earnest, surely, in our desire to make no mistakes. With fifty percent of incorrect diagnoses recorded and reported by Doctor Cabot, of Boston, and this with all the scientific aids, is it not obvious that we must continually strive not to make mistakes? In the Massachusetts General Hospital, mistaken diagnoses are matters of record only; with us, on the firing-line, they are disasters.

If diagnosis means study, it means also time. This is self-evident.

There are only twenty-four hours in the day, as always. The increased time necessary to examine our modern patient means a smaller number of patients that can be examined than formerly. If this increased time devoted to the diagnosis is not to be considered and paid for sufficiently to remunerate the physician for that time, when and where then, I pray you, is the conscientious doctor to obtain a competency? I grant that a certain amount of reputation results from honest, earnest endeavor, but there also accrues a reputation for dishonesty in one's not being able to meet the expenses incident to the practice that is farther reaching and more easily retained.

Reputation for medical efficiency is a fleeting, evanescent thing. You cannot gain a reputation and rest upon your oars idly for one moment. As Swift says: "Whoever hath an ambition to be heard in a crowd

must press, and squeeze, and thrust, and climb with indefatigable pains."

In any case, it may be a question of our ability, with all our aids, to make a satisfactory diagnosis. However, I believe the question generally uppermost in our minds, in any individual case, is: "Am I able to afford, or am I going to be remunerated sufficiently for the time required to make a diagnosis?" The patient's ability is limited, and so is ours, along the financial line. The case is put up to us in such a way that the lack of a diagnosis will be misconstrued and reflection cast upon our ability, when it is not a question of ability, from a scientific standpoint, at all.

These patients have an advertising-potential, adverse or otherwise, far and away beyond their financial ability. I have jumped into cases of this kind and made diagnoses after considerable study, and made good. Again, and just as frequently, my efforts have been misunderstood, through ignorance or downright viciousness, with the result that my patient has gone to some more superficial diagnostician, who told him a different story, one more to his liking, considering the difference in price especially; and to the day of my death I shall be hounded by this report—untruthful as it may be—of my inability to diagnose that case. Eventually I may be a winner, but it will be after the seeds of evil have been sown and their effects have devastated my soul.

More in Particular

Particularizing as to what scientific medicine means, allow me to say that it means a methodical history of a case, not orally, but in writing. The subjective symptoms are precisely what they have always been, but the collation of these symptoms is an entirely different proposition and a more formidable affair than in times not so far distant. While these are extremely satisfactory, they are time-consuming when taken directly; if through the medium of an interpreter, double or treble the time is necessary.

Then comes the objective examination—and here the difficulties are great. In this examination, there may be required all the modern methods; and these are being added to from time to time. Starting methodically with a complete physical examination, we proceed to round up the case, using such scientific aids as circumstances demand, until we are satisfied beyond the shadow of a doubt as to the correctness of our findings.

It is a problem in arithmetic, properly solved and then proved.

In many cases, by means of precise methods, we can, with great beauty, map out a working-knowledge of the case. It may mean a thorough urinary examination, both chemical and microscopical; an examination of the blood-count for leukocytes, erythrocytes or differential, or the hemoglobin content; an analysis of the gastric contents; a sputum examination; and possibly an x-ray examination. We may have to obtain serum for a Wassermann or make a luetin test for syphilis. Again, it may be necessary to make a Moro or a Pirquet test for tuberculosis, or examine the vaginal or urethral discharges for gonococci, or chancres for spirochetes; and so on, through the list. These procedures are in the domain of the ordinary practitioner.

The oculist says, "Look into the condition of the eye more frequently." The oral surgeon gives some lurid examples of failure to look into the mouth, and the proctologist gives you the same advice regarding the other end of the alimentary canal. The abdominal surgeon is continually chiding the general practitioner for not diagnosing his cases earlier and thus aiding the surgeon in more readily effecting a cure. Continually our attention is called to our sins of omission and commission. If these same surgeons could hear the advice frequently given and so infrequently taken, they would learn a valuable lesson on the real value of the average physician. The gynecologist raps us for overlooking pelvic conditions, and these must have a lookin. And so it goes. We are damned if we do, and we are damned if we don't.

Thus, as you see, considerable time can be spent on the average patient of average means or of no means at all. But, who is to pay for all this?

Does It Pay?

The greatest hindrance, as I see it, to putting the medical profession upon a firm financial basis is the lack of harmony in the various elements that go to make up the body medical in any individual community. Schisms and individual enmities cause interne-cine strife that makes for active competition, sure enough. But, it results, in the medical world, as it has resulted in the industrial world, in a chaotic competition, in which the poor physician is caught between the upper and nether millstones.

The only relief is in combination; here alone we have the individual units so inde-

pendent that they are inclined to remain actively competitive. A sad condition of affairs is, that, while the physician is striving with might and main to keep his head above water, the mass of people persist in believing that he has finances in abundance. Consequently he does not get that sympathy that he deserves. There isn't a charity anywhere that does not almost at the outset appeal to the physician for money, people forgetting that this very charity—the greatest of all virtues—is the one dark spot in the doctor's financial sky.

With our altruistic, idealistic, philanthropic convictions developed to the utmost, we are liable to—usually do—have anything but a well-balanced conception of our duty to ourselves and families. These altruistic ideas, balanced by some more practical ones, may be all right. I am sure that the physician who can live on easy-street is in a better position to cultivate the altruistic and philanthropic than the one who is living next door to penury. Solomon says, "Get wisdom, and with all thy getting get understanding." All I can say as to this is: "How long, O Lord, will it be until we get understanding?" If at the end of a long life we have been unable

to gain a competency from the practice of our profession, then, surely, it did not pay.

The cost of a medical education is almost prohibitive at present for the poor but ambitious young man; or, if he finds a friend who is willing to advance the necessary funds, trusting to the young man's integrity, the latter, the young physician, will find a long, weary road ahead of him. Then comes the fitting-up of an office in an up-to-date manner, with instruments of precision such as he has been taught are necessary to do scientific and conscientious work. He must buy an automobile, the first cost of which is great and its upkeep greater, to get there quicker, only to be paid less for his dispatch. We find our young physician starting out with a handicap that is serious to contemplate.

And, if, when the wintry side of a long, eventful practice comes, when the shades of night are falling fast, when the summons comes to join the innumerable caravan, when with wife and family about him there are no gathered sheaves and no garnered grain, then will an unreverential world pronounce the dread sentence, "Failure" and he, the physician, will be gathered to his fathers.

Puerperal Eclampsia

II. The Treatment of the Albuminuria of Gravidity

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

Professor of Obstetrics, Loyola University

[Continued from page 331, April issue.]

AS SOON as a pregnant woman has been found to be suffering from albuminuria, she should receive prompt and vigorous treatment, and be kept under close observation until her delivery. Indeed, she should not be lost sight of for several weeks after delivery, until her kidneys have resumed their normal functioning. It is not an infrequent occurrence to see these patients after delivery passing into a condition more serious than that during pregnancy. It is true that in most of them, as soon as labor is over, the kidneys rapidly return to the normal condition, whether treatment is had or not; still, I can recall several cases in which this did not happen. I know of a case, lately, in which a young doctor took it for granted that after labor the kidney trouble would take care of itself, but with the result that at the end of two weeks the

patient's condition was so serious that he^r family called in an older doctor, while the young man forfeited their confidence completely.

As a rule, these patients respond well to treatment, much better than during the pregnancy. Before labor, with our best efforts, the most we can usually accomplish is to ameliorate the symptoms sufficiently to carry the patient through safely. We can but rarely overcome the albuminuria entirely. But these cases of postpartum dropsy generally yield promptly to treatment, unless Bright's disease existed before the pregnancy.

The Old Catharsis Plan

Thirty years ago, albuminuria of pregnancy was almost universally treated by resort to excessive catharsis with elaterium, calomel, croton-oil or any hydragog that would produce copious watery evacuations. The pa-

tient's health and strength were greatly reduced by these drastic measures, and often the fetus was reduced to mere skin and bones. At the present day, such violent treatment has been pretty generally abandoned. In a few very severe cases, hydragog cathartics may be employed in moderation as an adjunct to other treatment, but ordinarily even this is unnecessary. For many years, I have given such patients no cathartics, merely prescribing mild laxatives for relieving constipation.

The principal objections to the catharsis treatment are: first, that it unduly weakens the patient just when she needs all her strength; and, second, that it does not reach the cause of the trouble, but merely aims at the most obvious symptom, namely, the dropsical condition. In so far as it produces elimination, it has some value, but has little effect as to the kind of elimination most needed—that through the kidneys.

The "Dry," or Water-Abstention, Regimen

Another mode of treatment that has had some vogue consists in depriving the patient of all liquids. This has always seemed to me utterly unscientific, because it does not go to the root of the matter, but is merely toying with one symptom, the dropsy, and that at the expense of adding thirst to the patient's other miseries. The dropsy can be reduced more satisfactorily by other means.

The Skim-Milk Regimen

In the past few years, considerable has been written in an attempt to prove that putting the patient upon a skim-milk diet is the sovereign remedy for the abnormal condition of the kidneys. There is no doubt that many of these patients are benefited to some degree by an exclusive milk diet; but there are many who cannot bear milk, while others suffer general impairment of strength on this diet. Where it agrees, I can see no objection to its partial adoption, although the condition is too serious to depend upon this alone.

The No-Albumin Diet

Some writers have vigorously contended that these patients should be deprived of all albuminous foods, just as in diabetes we cut off the sugar-forming foods. But this seems to me another case of very superficial reasoning, like that advanced to justify the "dry" treatment.

The conditions differ radically from those in diabetes. In the latter disease, the con-

tinual passing of sugar through the kidneys finally damages them irreparably. Therefore, it becomes a very important matter to reduce the sugar to the lowest possible amount. But the woman with the kidney of pregnancy is not losing albumin because she has too much of it in her system. She is losing it because her renal vessels are in an abnormal condition. The loss of the albumin is not the danger that threatens her. We are not so much afraid of what she is *losing*: it is what she is *not losing* (urea and other wastes) that endangers her safety.

In determining the diet of these patients, my object is, to have them well and comfortably nourished. An excessive amount of meat or albuminous food is bad for them, just as it is bad for everybody. Still, if one of these patients desires a moderate amount of meat or eggs, I permit her to have them, and the results have never given me reason to change my policy. A varied diet is more conducive to health than a limited one, and the patient who is well nourished is better fitted to go through her parturition, other things being equal, than if her strength had been depleted by excessive catharsis or a starvation-diet.

The views expressed above are not an untried theory. For many years I have applied them in all my cases, even severe ones, and the results have never disappointed me. Sometimes, when my patient has been in a hospital, my course has been observed with much doubt and headshaking by the staff, but the excellent results have, in the end, silenced criticism. So long as I can maintain proper excretion of wastes through the kidneys by means of the medication described below, I interfere as little as possible with the patient's normal habits.

The Digitalis Treatment

As soon as a pregnant woman shows signs of kidney complications, she should at once be placed upon some preparation of digitalis. However, the ordinary doses will accomplish little. It is absolutely necessary to give heroic doses—of course, under close observation.

The best plan for this digitalis-therapy is, to begin with a safe dose and then to increase this steadily until the pulse rate has been reduced to 60 or even lower. The rapidity with which this result is attained should depend upon the patient's condition. If her condition is urgent, and all her symptoms severe (much dropsy and scanty urine), the

drug should be given so boldly as to produce physiological signs inside of twenty-four hours, because delay may result in an eclamptic attack.

In giving such doses, the patient must be closely watched and the pulse recorded every two hours, in order to avoid digitalis-poisoning. Moreover, we must bear in mind that the effects of this drug do not cease when we stop giving it.

Where the albuminuria and its accompanying symptoms are moderate, it is better to go slower, taking three or four days to bring the patient fully under the influence of the digitalis. I usually begin with 10 drops (*not* minims) of the fat-free tincture every three hours; increasing the dose by 5 or 10 drops each day, until the pulse falls to the rate named above. With this dosage, it will be often enough to record the pulse three times every twenty-four hours.

If the patient cannot afford a nurse, some member of her family may be taught to count and record the pulse, but the doctor's supervision must be close enough to interpret properly the pulse indications. When the pulse has come down to 60 or below, it is better to stop the drug until it goes up again. Merely giving a smaller dose will not always prevent a further descent. The cumulative action of digitalis must always be borne in mind.

In giving the mother large doses of this drug, the fetal heart beats should occasionally be counted, too. I never had any harm come to the fetus but once, and that was where the mother suffered digitalis-poisoning through a druggist's mistake. The maternal pulse went down to 30, with rather alarming symptoms, but she rallied under stimulants, and, curious to relate, had no further albuminuria; however, a week later she was delivered of a stillborn child, doubtless a victim of too much digitalis.

As soon as the physiological effect of the digitalis becomes well marked, the action of the kidneys becomes more normal; the quantity of urine increases, its specific gravity rises, the albumin diminishes, and all the symptoms improve. In treating a drop-sical condition after delivery, results are obtained more readily than during pregnancy, the quantity of urine secreted sometimes being enormous. This would seem to indicate

that pressure on the kidneys interfering with the renal circulation is a factor in causing the albuminuria of pregnancy.

What Preparation of Digitalis Should Be Used?

For years I was in the habit of prescribing the infusion of digitalis, and even today many obstetricians adhere to this. But I was hampered many times by the fact that the stomachs of many persons will reject it when taken in the large doses needed to be effective. Besides, it varies so much in strength that a more uniform preparation is very desirable. When the fat-free tincture was brought out, I gave it a trial, and results were so satisfactory that I have continued to prescribe it ever since. It is uniform in strength, the dose is small in bulk, and the nauseating properties (saponins) of the plant have been removed.

I have been asked why I do not use the active principle rather than the tincture. My reasons may be summed as follows: (1) When I have found a satisfactory remedy, I am slow to change it. (2) The action of an active principle is not always the same as that of a preparation containing all the medicinal virtues of the plant. Digitalis contains several principles, and to determine which one or what combination of them would give a satisfactory result in puerperal albuminuria would involve considerable experimentation, more than I care to inflict upon my patients in so serious a pathological condition. [There are excellent concentrated preparations of digitalis, containing all the therapeutically active glucosides, without the dirt and waste.—Ed.]

I also have been asked whether I never prescribe any other drug in conjunction with the digitalis. As to that, in the past twenty years, I have had three cases in which I thought it advisable to give something in addition to the digitalis. I tried full doses of acetate of potassium, which produced satisfactory results in two of the cases, but failed in the third. In the latter I then tried diuretin with the digitalis, and had excellent results. In a later case, I tried diuretin alone, to see whether it would answer as a substitute for digitalis, but it failed to benefit the patient until digitalis was given with it.

[To be continued.]



The Treatment of Acute Articular Rheumatism in an Infant

By CLIFFORD E. HENRY, PH. G., M. D., Minneapolis, Minnesota

SO far as I have been able to discover, there have been recorded only nineteen authentic cases of acute articular rheumatism occurring in nursing infants; but, while rarely attacking nursing infants, it is not uncommon in children past the fifth year of life. The cause of this disease, in my opinion, eventually will be found to be some toxemic agency.

The case which I report herein I consider unique, in that there is not only a history of the immediate illness of the child, but a preceding history on the part of the mother.

On November 21, 1914, I delivered the mother, and the labor was prolonged and difficult, while her recovery apparently proceeded normally, aside from the temporary shock consequent upon the forceps-delivery. About two weeks later, on December 4, the nurse noticed some purplish spots on the woman's legs, but she had no fever and was feeling well; she left the hospital on December 6, when both mother and baby seemed to be in good condition.

On December 11, I was called to the house and was told that the baby had cried all day, having the colic and also having caught its left big toe in the blanket and sprained it. The toe, I found, was red and swollen and painful when touched. I advised a compress wet with witchhazel extract. The baby then weighed just the same as at birth, namely, 8 pounds.

Dec. 12. Temperature, 101° F., rectal. The right shoulder is very painful. Cries whenever she is touched or moved. Bowels costive. Ordered: Calomel, gr. 1-10; also, 5 grains of sodium salicylate dissolved in 15 drams of water; one teaspoonful to be taken every four hours.

Dec. 13. Temperature, 99.5° F., rectal. The shoulder does not seem so tender, but the elbow is somewhat swollen and painful when moved. Had two bowel movements; stools look normal.

Dec. 14. Temperature, 100° F., rectal. Joints about the same. Had no bowel movement without an enema. Ordered thtiture con-(gr. 1-10) and sodium salicylate mixe calomel tinued.

The mother having a cracked nipple, I ordered compound tincture of benzoin applied and a nipple-shield worn.

Dec. 15. Temperature, 100.8° F. Changed the salicylate dose to 1-2 grain in solution every four hours. There is a mitral murmur.

Dec. 16. Temperature, 99.8° F. Doctor Sedgwick was called in consultation as to the advisability of using an autogenous vaccine. He confirmed my diagnosis of acute articular rheumatism and was of the opinion that such a vaccine would be of no value.

Dec. 17. Temperature, 99.8° F., rectal.

Dec. 18. Temperature, 99.8° F., rectal. Added colchicine, 1-128-grain, thus making the solution consist of sodium salicylate, gr. 10; colchicine, gr. 1-128; water, 20 drs; with instruction to give 1 teaspoonful every four hours.

Dec. 19. Very restless all night. There seemed to be a spasmodic condition in the abdomen. Had no bowel movement since yesterday morning. Made up the medicine without the colchicine.

Dec. 20. Temperature, 98° F. Has not been so restless.

Dec. 21. Temperature, 99.6° F., rectal. Slept well until 1 a. m., then waked with cramps. Bowel movement yesterday by the aid of an enema; stool very green. Elbow and shoulder more swollen and quite red; thumb quite red. Ordered galactenzyme, half of 1 tablet every four hours.

Dec. 25. Temperature, 99° F. Has lost 1-4 pound the last week. Arm and toe are better, but elbow unchanged.

Dec. 27. Temperature, 98.6° F. Arm the same, otherwise better. When she wakes now she will lie without crying.

Dec. 29. Arm less swollen and she can move it.

Jan. 2. Temperature, 98.6° F. Very much better in every way. Reduced frequency of medicine to one dose every six or eight hours, depending on the temperature.

Jan. 4. Temperature, 98.6° F. There is very little redness and swelling of the arm. The heart murmur can be heard only after a crying-spell.

Now we come to another chapter in this history, one which I consider to have a very important bearing upon the case.

Jan. 7. The mother complained of pains across the lower abdomen, worse in the region of the appendix. Told her that she

must stay in bed and ordered an ice-bag applied to the lower abdomen.

Jan. 9. Woman went to St. Paul and was taken very sick with pains in the region of the appendix and in right side of the chest. Friction-sounds were heard in the axillary line at about the 6th, 7th and 8th rib. Pulse, 92; temperature, 100.2, respiration, 24. Ordered ice-bag to the abdomen. Also, a solution of aconitine, 1-800-grain, and bryonin, 1-64-grain, repeated every hour.

Jan. 12, 9 a. m. Pulse 84, temperature 98.6°F., respiration 18.

Jan. 12, 1 p. m. Performed operation at the hospital, making median incision. The abdomen was filled with a dirty dark fluid; appendix highly inflamed. Right fallopian tube was highly inflamed and covered with small granules that looked like drops of dew. Appendix and tube were removed. The patient standing the operation well, the cervix and perineum were repaired at the same time. Recovery proceeded uneventfully.

Feb. 2. Patient feeling fine, wound entirely closed. In March, 1915, I received a letter from the husband saying that the wife and baby were well and feeling fine.

There is no doubt about this having been a true case of acute articular rheumatism in the babe, and I believe the trouble commenced with the purpuric spots on the mother's legs. The infecting agent came to the baby through the breast-milk. Because of this, I am inclined to believe it was a toxin. The infection culminated in an attack of appendicitis, with what looked to be a tubercular tube, although the mother has been well since.

This could not have been scurvy, because it was controlled by the salicylates and the child was breast-fed. It was also too young for scurvy to have developed, even though some investigators have found a bacterial invasion in the blood of scorbutic patients.

None of the nodules of rachitis were present.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

Medical Director of the Mudlavia Sanitarium

[Continued from page 324, April issue.]

FOLLOWING are some of the principal dietetic faults commonly committed, as noted by Dr. A. L. Benedict:

Diet Suggestions

1. Milk diet. Deficient in iron, contains approximately 4 percent of each organic nutriment, hence, deficient in carbohydrate; yet, levulosuria is liable to develop if 3 liters, or even less, is ingested in a day, corresponding to only 120 Grams of carbohydrate. Introduces too much water for the adequate ration of proteid, while fat is exceeded. Especially objectionable in persons exposed to cold or otherwise requiring energy and heat, and in those prone to colon-bacillus virulence, hence, in typhoid-fever.

2. Broth (beef-tea) diet. Contains practically nothing but water, salts, purins, and a little gelatin. Valuable only as a stimulant, distinctly contraindicated when purins are in excess, as in gout, lithemia, hepatic and renal disease; but having almost no nutritive value.

3. Egg diet. Seldom tolerable, nearly lacking in carbohydrate. Each whole egg contains about 8.5 Grams of proteid, 5 of fat, each white about 6 of proteid. Six eggs constitute a fairly adequate ration of fat and proteid, but it is difficult to add the necessary carbohydrate alone. If given raw, the albumin is apt to pass through the kidneys, in part, unutilized.

4. Spoonful diet. It makes very little difference whether a teaspoon or tablespoon is used or whether the interval is half an hour or two hours; not enough nutriment can be given of any liquid or semiliquid food, while the stomach is kept irritated.

5. Raw meat diet. Parasites are likely to be introduced, at a time when the patient is especially susceptible. Deficient in fuel value.

6. Meat juice and meat extract diet. The maximum richness is about 7 percent of proteid, as prepared for administration, hence nearly a quart is required for the proteid ration, and it is absolutely impos-

sible to give enough to provide the necessary calories.

7. Cereal diets. Most excellent if properly combined with milk, eggs, butter, and meat, but usually given without due attention to variety and total ration. Lacking in iron.

8. Ambulant diets. While usually fairly well regulated as to negative danger, that is, with regard to positively harmful and indigestible ingredients, too little attention is paid to variety and appetite, and the physician usually has not the faintest idea of how much proteid, fat, and carbohydrate is actually being taken.

9. Frequent-meal plan. Supposed to avoid overtaxing the stomach, especially in atony, dilation, and ptosis, and to increase the total assimilation in reduced strength. Almost invariably infringes on the period of physiologic rest for the stomach, hence, renders these conditions worse and sometimes greatly exceeds or falls below the total ration needed. Systems of 13 daily meals have been seriously proposed by physicians of influence. Usually 3 to 6 daily meals are sufficient.

Considerable variations are likely to occur in the quantity and quality of food which any individual consumes, as well as in the assimilating processes by which what is taken into the stomach is animalized and fitted for repairing the waste of the system. If more food be assimilated than the waste of the body requires, a state of repletion must be the inevitable result. But repletion may also take place under a moderate and even abstemious use of food when, from sedentary habits, inactive life or other cause, appropriation of blood by the nutrient and other secretions is languid and insufficient.

As repletion, then, may take place under very different circumstances, so is its presence marked by different phenomena. Whenever it arises, one or two consequences are sure to result: either it excites the several functions if sufficiently healthy and vigorous to increased actions, leading to its speedy appropriation and removal; or, if these be weak and unable at the moment to institute and support these increased actions by which the redundant matter is to be appropriated and expelled, then, oppressed by a labor to which they are unequal, they manifest a decline of even their ordinary power, and all the outward phenomena of debility are displayed. To discriminate this state from one of real debility arising from exhaustion of animal power or from defective nutrition, is

a matter of practical importance not inferior to any which medical science may be engaged in illustrating.

The Diet of the Aged

It may be doubted whether any disease, excepting such as results from a morbid poison, ever takes place suddenly or without previous derangement of the general health, cognizable by its appropriate manifestations and capable of being corrected so as to obviate the morbid accession to which it leads. If this can be demonstrated, it is clear that this introductory stage of disease is of the highest importance, as being that to which prophylactic treatment can be most beneficially directed and also as forming a part of the ensuing disease essential to its complete history, and without a knowledge of which its intimate nature or the series of morbid changes never can be thoroughly understood. Such a definite expression of opinion appeals to one's own experience. Apoplexy, aneurysm, angina pectoris, sudden death from failure of power in a fatty heart, all are the outcome of a full artery; and a full artery is, in turn, the result of the blood being highly charged with nitrogenized waste. If the latter could have been removed, all the rest could have been avoided. It is only when some untoward accident happens that medical aid is called in. Until this period arrives, medical aid is rarely sought, and, when it is called in, it is too late to be of much service. These grave diseases of advanced life are the outcome of a condition readily amenable to treatment—if taken in time.

Where there is a tendency to the full habit, great moderation in food and drink should be practiced, involving a great deal of self-denial on the part of the individual; but the result is worth all the pains involved. The sense of lightness, the capacity to get about, the better spirits which are the outcome are a sufficient reward; while beyond lies the lessened liability to these serious issues of the full habit.

As age goes on, there is a loss of tone in the various organs of the body; just as much as there is in the cerebrospinal nervous system and the muscular system. As locomotion becomes impaired in age, so the functional activity of the various viscera wanes. It is found that the organic nervous system is impaired and that there is a development of connective tissue in the nervous centers with an increase of pigment—while the true nervous tissue is deficient. Such

being the case, the loss of functional power is readily comprehensible.

Indeed, development of connective tissue, with decrease of normal elements, is the change, above all else, in the viscera of old age. Beyond this, there are special changes in the anatomical structures of the intestinal canal. Participating in the general wasting of the organs and tissues, the stomach and intestines lose bulk and become thinner in old age. Their glandular apparatus is also atrophied. The wasting of the tissues composing the stomach and intestines is more obvious in the duodenum, jejunum, and ileum. In some cases, it is carried to such a degree as to admit of the contents of the intestines being distinctly seen through the attenuated structures. In striking contrast, the larger intestines occasionally preserve their natural thickness, chiefly through a compensating hypertrophy of the muscular coat. The mucous membrane is usually paler than in the normal state, but generally acquires an ash-gray color as life advances. In the stomach it is often traversed by enlarged veins, which assume a varicose character; these becoming more numerous in the lower portions of the intestinal canal and being particularly conspicuous toward the termination of the colon and rectum.

Stress has already been laid upon venous congestion of the portal circulation; and, amid other senile changes, there is developed a varicose condition of the veins of the alimentary canal as advanced life is reached. No wonder, then (if a degenerate state of the organic nervous system is linked with disappearing muscular fibers in the small bowels and a glandular decay in that portion of the bowels where absorption is most marked; and to these is added a varicose condition of the veins), that the digestion and assimilation of aged persons are enfeebled.

Such anatomical consideration throws a flood of light upon the digestive troubles of old persons. The teeth are often decayed or lost, and mastication is difficult, so that much of the food passes into the stomach without the preliminary chewing that prepares the food for the action of the stomach—itsself enfeebled, and scarcely fit for its own work. Consequently, we see that the food should be adapted to the requirements and capacities of the aged. "Once a man, and twice a child" is true of man.

As the digestive powers wane, the condition approaches that of the infant before the teeth are developed. We do not give meat to infants before they have teeth with

which to masticate it. So in old age the dietary should approach that of the nursery; and in very advanced life baby-foods are distinctly indicated. Milk with farinaceous foods or meat-soups with farinaceous matters are suggested. And, remembering the physiology of digestion, it is clear that foods in which the starch has already been acted upon and changed into soluble dextrin and maltose are clearly to be preferred. Malt is a typical food, and ground malt ought to be added to any farinaceous matter before the milk is poured on for a milk-pudding. Also, baked starch is preferable to raw starch, as having undergone some change homologous to the digestive process. If baked flour or broken biscuit be employed with the malt, then an ideally digestible food is furnished to the enfeebled system. Such a milk-pudding is infinitely better than the ordinary one of raw starch sweetened with cane-sugar, as not only being more digestible, but as being far less liable to turn acid in the stomach—a matter of no small importance in feeding elderly persons.

Indeed, all food should be such as to tax but little the digestive powers, which gradually fail with advancing age. This is too self-evident to require much insistence. The meals should be small, and they should consist of porridge (all the better if made with cereals or other farinaceous matters that have already been exposed to a high temperature), with a little fish for breakfast, and some sound fruit. Then, for lunch, some milk and malted food, with a digestive biscuit and butter, and a generous glass of wine or some aromatic nonalcoholic fluid would be suitable. At 5 o'clock, it might be well to have a cupful of beef-tea, thickened with shredded maize or an equivalent of meat-broth and cooked farina. Dinner should consist of white fish, a sweetbread or chicken; a pudding of cooked starch or the malted material just described, with cheese, and some good fruit. A glass, or even two, of sound wine—"the milk of the aged"—would not be out of place. Of course, there are hundreds of persons well advanced in years who would have the most unbounded contempt for such a restricted dietary and who still yield to the temptations of the palate; still, the principle of such dietary is well founded, and such a series of meals forms a base-line of what the food ought to be and a guide as to the direction to be taken in the dietary.

It would be insufficient, some old gourmand might plead. Certainly, it might

be as to the palate, but not as to the actual needs and requirements of the system. Tissue change and tissue repair are not great in advanced age; while accumulation of earthy salts, especially in the arterial walls and valves of the heart, is part of the diseases which strike at the waning life of old persons. First and foremost, indeed, comes the nutrition. As the maladies of youth are largely matters of defective nutrition, so in old age the diseases are closely linked with the presence of redundant waste or effete material in the body. The food should be neither too great in bulk nor too rich in plastic materials, but such as is required to maintain the body temperature and repair the tissue waste. The tissue waste is small, therefore, the albuminoid elements of the food should be but sparsely supplied; the body-heat is prone to be low, so, hydrocarbons should be given freely. Milk and carbohydrates should form a large portion of the dietary.

It is obvious that the food of the aged should not consist too largely of albuminoid materials. It is the more necessary to insist upon this, as the idea is so widespread and so deeply rooted that the flesh of animals is at once the most digestible and sustaining food. The lesson preached all along is that of many dire consequences of a blood laden with nitrogenized waste. The tissue repair of the system in age does not require much albuminoid material. A little proteid food will meet the actual necessity. The rest is *luxus consumption*. It was all very well for Isaac to crave after savory meat before he died; the very fact shows that he did not often get it and that the eating of this meat was the preparation for an important family ceremony. The pottage for which Esau bartered his birthright (a mess of lentils and vegetables) was in all probability the staple food of those primitive people. Indeed, Canaan was not looked to as a country of beeves and butchers' meat, but "of corn and wine" and as "flowing with milk and honey," while the excursions into Egypt from time to time tell of a corn-eating race. Bread and milk and honey formed an admirable dietary for longevity—especially for a dyspeptic race.

The food of the aged, indeed, should be once more like the food of the nursery. Farinaceous matters with milk or messes with lentils, that is, casein, either in animal or vegetable form; the most easily assimilable of all forms of albumen, possessing, too, the least tendency to the formation of uric

acid. Again let it be insisted upon that a great deal more albuminoid matter than the system requires can be eaten with impunity, so long as the liver retains the power to convert the excess into soluble urea. But when this power is waning and a degraded activity takes its place, the tendency is to form uric acid or urates; both only sparingly soluble. Consequently, if more meat be taken than the system requires, then the proportion of waste matter in the body must be abnormally large. It may seem unnecessary to insist upon this again and again, *usque ad nauseam*, but "the heart of man is deceitful above all things and desperately wicked; who can know it?" Jeremiah found: and so is his palate!

Bread and milk and honey form a typical meal for aged persons. To many, of course, such a dietary would be so monotonous that they would probably decline eating altogether; still, it is a type of what the dietary ought to be. Farinaceous materials, porridge, hominy, shredded maize, boiled with milk, should form the first item of breakfast. This might be followed by bread and butter and honey or jam. Then luncheon should consist of a little fish, with some real melted butter, or some well-mashed potatoes in which the cook has not been a niggard with her cream, followed by a milk-pudding and some fruit. Then dinner should run on something like this line: a good soup with cream or marrow in it, a sweetbread or fish, a little chicken or game; a milk-pudding, cheese, and a digestive biscuit. Wine need not be prohibited. A glass of Port, Madeira or Marsala (according to the means) may be taken at luncheon, and double the quantity at dinner. If the person is a teetotaler, then some of the tonic drinks now on sale may be taken. Such would be an ample dietary of suitable materials—better than the "flesh-pots of Egypt!"

There seems to be too little fruit, as a rule, allowed in the dietary of old patients—and young ones, too, some would say. Perhaps a considerable quantity of fruit to one unaccustomed to it may derange the bowels, but then it comes within the limits of human possibilities to avoid this. A certain quantity of fruit daily would be good and would tend to keep the bowels open. In summer and autumn, fresh fruit is available; in winter and spring, there are the store fruits, dried fruits, and canned fruits; or fruit can be stewed and served with milk puddings. As to pastry and meat, they are unsuitable; the first from the difficulty of its digestion,

the latter from the inability to get rid of it in its waste form. Such meat as is taken should consist of white meat, fish or fowl, and game. Fat is often repugnant to the

palate, but it is capital fuel-food, and that is what old folks mainly require. They do best with it as in milk.

(To be continued)

Safety First in Automobiling

By A. L. BENEDICT, M. D., Buffalo, New York

Editor of "The Buffalo Medical Journal"

IT SHOULD be remembered that this series of articles on the use of the automobile is intended for beginners.

As a general rule, the one imperative necessity to avert accident is to be able to stop promptly. To this there are numerous exceptions, but the beginner should firmly impress upon his mind at the very outset exactly what he must do with his feet and hands when he wants to stop the car. He should also be sure to hold out his hand to warn those behind him, while he will probably instinctively make a noise of some kind, orally or by horn, as an additional warning. Even in the five percent of cases in which sudden stoppage is the most dangerous procedure, it will almost invariably be free from legal dangers, and the damage will be to the rear, and less vulnerable, part of the car. For instance, a policeman may signal to come ahead quickly and may be very cross at your sudden stopping; but he can scarcely make an arrest because of it; whereas, he may do so for a violation of contrary directions. A sudden stop may cause a rear-end collision, but the man behind is theoretically, if not in practice, required to allow for such emergencies; and, if he cannot be held to pay damages, it will be only the rare exception that he can collect them.

Until one has learned to control the car automatically, it is a wise plan to go at the minimum high-gear speed and to make turns and street crossings on neutral, with foot on the brake. It is certainly better to waste gas and lose time than to incur danger. Rehearse sudden stopping, even at the expense of a little tire wear, when it is not necessary; and, for weeks and especially after dark, rehearse frequently, at least the foot and hand movements up to the actual application of the brake, until they become mere reflexes. Do not run your car farther than the nearest repair-place, if there is any imperfection of the brakes. For most makes of car, impress it on your mind that the emergency-brake is

of no use in an emergency. Do not brake and reverse at the same time. If the emergency is great enough to justify the use of the reverse-lever while going forward, do not lessen its effect by braking also.

Always go slow on entering a narrow place or one where the road may suddenly end—and these factors apply to the garage. Stop and look at both sides of any doorway before you pass it, until you are thoroughly familiar with it. It seems as if there were a peculiar perversity attaching to doorways, so that a projecting lower portion, a hasp, a pipe built into the floor or any litter piled on it restricts the free passage to the minimum.

Unless you are an expert, do not go backward at maximum speed nor without making occasional almost full-stops. Theoretically, steering is as simple as in controlling forward movements; but, remember how extremely difficult it is for most persons to perform accurately any kind of reversed or mirrored motion.

Skidding

Whenever the inertia of a vehicle is sufficient to overcome the friction of the wheels on the road, the friction is practically never so evenly balanced but that some degree of lateral slipping will result. Given a sudden turn at high speed, on a perfectly dry pavement, inertia either will cause the wheels of the side nearer the center of the radius of turning to rise in the air, possibly so as to result in overturning, or the tires will slide laterally—skidding. Dust, mud, snow, oil, dampness or unevenness of roadway on the one hand, weight of car and speed increasing inertia or relative grasping power of the tires—corrugation or smoothness—on the other hand, influence the tendency to skidding. As a rough rule, it may be said that, with a dry and firm roadway, any car may be operated up to any practicable speed without danger of skidding, unless for a sudden stop or turn of more than 45 degrees. It is even

more important to remember the converse of this rule, that skidding will occur to a dangerous degree at a speed beyond 20 miles an hour, upon a sudden stop, a right-angled turn or even a turn of a less degree in the winding of a road or in passing another vehicle if the steering-wheel is jerked.

Dust and unevenness of roadway do not require corrugated tires for light cars and, at moderate speed, do not involve serious danger of skidding for any car, except at turns and short stops.

Oil and water, unless sufficient to make a puddle on a smooth surface, such as asphalt or brick or a macadam road in perfect condition, do not cause much danger, nor do they on a dirt road unless a soft mud is formed. Oil and water together, on an impervious pavement, make a very dangerous combination. Thus, the gradual accumulation of oil on asphalt in dry weather does not cause danger, but makes a very slippery foundation as soon as enough rain has fallen to wet the pavement thoroughly. On the other hand, more rain washes off the oil and the pavement becomes safer again.

A little light snow scarcely interferes with driving; and packed snow, mushy snow and sandy snow are only a trifle worse than corresponding dirt roads. Deep snow holds the tires against excessive skidding, while itself preventing undue speed, so that the danger is rather in the way of side-swiping obstacles that ordinarily are easily avoided than in hurling the car in a way that may cause serious collisions.

Any car will skid more or less in mud, especially on banked roads or on hills, and even chains do not absolutely prevent skidding under such circumstances; consequently, it is wise for one of two vehicles meeting in a slippery road to be brought to a full stop. The beginner should remember that without chains, and sometimes even with them, he may spend several hours in a soft sag of a road, and that the grass-plot at the side of the road may be worse than the mud puddle which he is trying to avoid. It is better to make a detour of several miles.

The tendency to skidding is diminished when all four wheels are allowed to run perfectly free. In other words, one should approach any skiddy spot on neutral and apply the brake gradually. Often it is safer to suffer a collision at low speed than to jam on the brakes and skid. For example, it costs less to break the headlights and bend the fenders against the rear of a stopping street-car than to brake suddenly and be thrown

into the track of a rapidly moving car coming in the opposite direction.

Skidding differs for different cars and also for the same car, according to the different speeds, different roadways and grades, and for corrugated or smooth tires or tires plus chains. Strange as it may seem, skidding should be "rehearsed," but very carefully and in an open space. Begin with taking curves and making full stops at very moderate speeds on level dry pavements and roads and far enough from curb (or, kerb, if you prefer) or ditch, so that no great damage may be done. Then gradually work up to more unfavorable conditions of speed, grade, and roadway, so that by experience you will know just what to expect under various conditions and will sense it automatically. Learn, through practice, how much better it is not to steer against the car's tendency to skid—the result of which is analogous to yawing in a boat—as well as how much worse you will make matters by braking, although with a small light car on a slippery pavement, you usually will merely swing sharp around and may even resort to this maneuver to get out of a tight place.

The Safe Way to Drive

There is but one possible way to insure permanent safety in driving an automobile; namely, the driver must grasp the principle that he has to assume the full responsibility himself, and besides must be prepared for the most unexpected, foolish, and irresponsible acts on the parts of others.

All of the few actual accidents and nearly all of the near-accidents that I have had come under this category, and all of them could have been averted—even in view of the uncomfortable realization of what might have been—by due attention to this rule. One is tempted to feel that, if he drives a heavy-enough car at a sufficiently reckless speed, others will flee in terror: BUT—there used to be a driver of this class, and a careful one of the kind, who regularly late in the night drove past my house, with his cutout open and blowing his horn for crossings, traveling at a speed of something like 35 miles an hour. He is doing so no more. Perhaps he reformed spontaneously; perhaps he was arrested; perhaps he was one of four chauffeurs who, in two collisions at our corner, came together with much shattering of glass and metal, both accidents in consequence of the assumption that it was too late for anyone else to be out.

Then, to continue the clinical method:

there was a motor cyclist who tried to cross a street when right-angle traffic had the right of way. It was a perfectly open crossing, but he was running on a cobblestone pavement, so that every consideration of comfort and economy should have kept him to a slow speed. Undoubtedly this man calculated that it was only a slow coupé-electric coming and that he could get ahead of it; however, the other one mangled his machine, in addition to breaking his femur. What he did not realize was, that the owner of the electric car was a very rich and influential man who not only could afford a costly vehicle of high speed, but who, further, could afford to run it ten miles or so beyond speed-regulations.

Then there was a very nice but not altogether temperate young chap who ran amuck in one of the city's streets. Other vehicles turned off at cross streets, trespassed on private driveways, even climbed over the curb to save themselves from disaster, but this wild driver's hand was unsteady, and, before long, his career ended with his funeral.

Two men were struck at the same time on a railroad-crossing. It was a jerkwater branch of a railroad that even on its main line is the butt of all sorts of jokes as to slow speed and infrequency of trains. However, that time there was a train there at that crossing.

The Important Psychologic Factor

One large factor of safety consists in comprehending what are almost axiomatic principles of psychology and human nature. Country-driving on Sunday and late at night is especially dangerous because of its associated indulgence in alcoholics, especially so far as inbound automobiles from clubs and roadhouses are concerned. A crowded highway is dangerous, not merely on account of the multiplication of chances of danger, but because the kind of people who follow the crowd are, in the aggregate, less intelligent and therefore less careful and conscientious than those whose interests are less popular. U. S. mail-vehicles are generally recognized as highly dangerous, for the reason that, partly as a matter of necessity in making time and partly because their drivers appreciate to the full that the nation is above the municipality, they do not attempt to keep to the right. A secondary reason is, that the bright-red color of mail-wagons is surprisingly near invisible in a faint light and in a mist or rain.

Farmers are proverbially independent and many have not yet quite abandoned their

early antipathy to automobiles, nor have their horses become so universally blasé as city horses. Many of them will not carry lights after dark and insist upon using the middle of the road. They do not realize that, when on foot, they can not be seen by a driver going in the same direction if another automobile approaches with bright headlights. Pedestrians on an unlighted road would be safer if they walked on the left side, as they could then see an approaching automobile. On the other hand, it is only fair to the farmer to remember that he is more likely to be on the road for business, but the automobilist, for pleasure, and that the former is more likely to be the more direct owner of the road, so far as residence and tax-paying are concerned; also, that so far as classes of vehicles are concerned he has priority. The humane man will also recognize that sudden changes in the status of inertia mean strain and suffering to a horse and that for this reason alone he should voluntarily put himself to some inconvenience.

But, aside from such considerations, the general policy of acting as if a possible was an actual danger pays in the long run. For instance, I recollect running at about thirty miles an hour behind another automobile that passed a wagon which got out of the middle of the road just in time to avoid an accident. My first thought was that the driver needed his lesson, but my second, that it was just barely possible that he hadn't learned it. And he hadn't; for, he immediately pulled back into the middle of the road and a little beyond. According to all rules of logic, I should have been perfectly safe in following the first machine without reducing speed, merely sounding the horn, but the rule would not have worked. Once, on a muddy and very convex road, I sounded the horn and tried to pass a buggy to the left, as the law requires, but at that same moment the buggy-driver ahead had reached his private driveway and so suddenly turned squarely to the left athwart the road. Fortunately the collision was not serious, since on such a road we could only crawl along. I was threatened with arrest, though not so much for careless driving as for eloquence in attempting to instil some rudimentary conception of the proper use of highways. A few similar experiences falling just short of actual collision have impressed upon me very thoroughly the conviction that the man ahead is likely to do any conceivable thing at any moment, except the expected.

As already stated for railroad crossings, one is prone at the beginning to be unduly impressed with infrequency of traffic. There is no time of the day or night, no road so grass-grown, no place so deserted that one can afford to regard himself as the only one using the road. This fact should be remembered, both for safety and for convenience. Having to pick up tools and start the car to make way for someone else or oneself having to wait for a picnic-party to park its car at the side of the road instead of in the middle of it—with nothing but the middle of such a road—has impressed this lesson. There is a charming road near Buffalo that leads nowhere and which is rough and, if possible, muddy for part of the way. I feel almost as if it belonged to me, because so few persons know of it. But one day—although my machine was in perfect repair, and just because I wanted mental peace and physical fatigue—I went over that road on a bicycle, when I came upon an auto-party of four, who really should have remembered that no road is safe from intrusion and that at times the unobtrusive silence of a bicycle may have its disadvantages.

Eulogy of the Bicycle

In parentheses, it may be worth while to emphasize the fact that the automobile does not, by any means, entirely take the place of the bicycle. Professionally, the latter is often convenient and time-saving for emergency-calls, especially at night, unless, as in Atlantic City, the physician can keep his machine under his front veranda. The wheel is also more convenient for doing numerous errands in a round of only a few miles. For pleasure, it does not, of course, give the radius that the automobile does; still, it enables one to get into and not merely through the country. Given a little more free time, it is far superior to the automobile for sight-seeing, as in a strange city or unfamiliar country, and more particularly abroad, and it has the enormous advantage that any route is ultimately feasible and passable and any spot attainable. Some persons are so thoroughly automobilized that at times they forget the superiority of other modes of locomotion. Two physicians of my acquaintance use their machines to go half a block to mail a letter. Not uncommonly, business men lose time and incur unnecessary expense because they will not take a train.

From the hygienic standpoint, the bicycle is almost entirely free from nervous strain,

especially if one avoids state roads, which usually are uninteresting, dangerous on account of automobile traffic, and liable to cause punctures to any pneumatic-tired vehicle. One can drive and at the same time safely look. The muscular exercise is more wholesomely tiring, but not so liable to require occasional strain. Moreover, it should not be forgotten that the average patient does not need these benefits of the bicycle nearly so much as does the average physician.

The bicycle has a certain educative value. It trains the faculties of observation more broadly than does the automobile. A few years ago, before automobiles were so common as at present, I stopped my bicycle to offer sympathy and possibly help to a more progressive friend in an automobile standing beside the road. He thanked me and assured me that he had merely stopped to enjoy the scenery. That was the first time that I had ever seen an automobile standing still in the country, except for repairs or to enjoy any scenery at a distance from a road-house. And, to this day, one can almost distinguish by the routes chosen, the way of driving, and the places of stoppage those automobilists who have previously been educated by the bicycle.

More Safety Points: Guarding Against Trouble

To return to the consideration of safety. Never go beyond a city line or, at most, beyond a well-traveled interurban route when there is anything out of order with a car, nor with a low supply of gasoline and oil. Nor is this enough. One must, in addition, be able to make repairs of parts that may possibly get out of order, up to the point where it is more economic to rely on expert assistance.

In particular, there should be carried at least one extra outer tire of each size, two or three extra inner tubes, patching-outfit, two or three (or, better, a full set) clean and adjusted and tightened spark-plugs, oil, grease, heavy and light insulated wires, extra electric bulbs (or kerosene, if the latter be used), extra nuts, valve-caps, a few nails and screws, cotter-pins, and the like; besides the ordinary equipment of tools; and all should always be stored away in an orderly way. Be sure always to test the lights long enough before dark to allow for adjustment and repairs or for a change of route if the trouble should turn out to be beyond your skill.

However, do not attempt to carry preparedness too far. A lecturer on obstetrics once said that, if he carried all the equipment advised, item by item, for possible emergen-

cies, he would need an express-wagon; and the same point has been made for the automobile by a recent cartoon representing a man carrying a complete car strapped behind. There is not enough space available for everything that might conceivably be required. One can run without a starting-battery, can get water anywhere, and can prevent freezing by keeping the engine running for short stops or draining the radiator for long ones. No serious harm will come from running a machine without a fan-belt for a moderate distance and with care, to prevent overheating, on low gear, by stopping occasionally. A broken muffler involves only slight risk of fire, many pestiferous joyriders even cutting it out habitually. Ordinary insulated wire of approximately the same size can be utilized to replace broken connections, and insulation can be temporarily replaced by tape or even dry rags or a string.

Help in Time of Trouble

In most parts of the country, one cannot get more than twenty miles from a stock of practically any ordinary part or supply or more than five miles from telephonic communication with a good garage. On a traveled route, some sort of assistance will come along within an hour or two at almost any time. Almost any driver of an automobile will, from kindness of heart or for money, do anything for any other in trouble, although some limit their sympathy and helpfulness to those having machines of approximately the same grade. One sometimes wishes that the automobiles that stop in superabundance to offer lifts to other automobilists deprived of their means of locomotion would more frequently give rides to those permanently without them—a course that undoubtedly would go far to bring about a more kindly feeling.

It is sometimes difficult to distinguish between the cases in which assistance should be regarded as a fraternal courtesy and as a matter of business. For example, a young man on a motor cycle once patched a bad blowout for me, working some two hours in the dark, and he refused any pay from me. On the other hand, I myself have twice been offered money for help. On one occasion, I was in a bathing-suit and alone with a small car, so that I could not feel offended. On the other occasion, I was fairly well clothed and with a companion who addressed me as "doctor," so that it seemed either that the persons whom I befriended should have been

more discerning or that the acceptance of pay for acts of courtesy is more widespread than it should be.

The Question of Insurance

Insurance is an important factor of economic safety, and it can be secured to cover almost every element of danger connected with automobiling, except criminal responsibility. Fire, theft, liability for damages, and a limited form of recompense for injury and death are the usual combination, the total annual premium being a little over 10 percent a year for small cars, and the rate not increasing proportionately with the cost of larger cars. Insurance to cover a member of the family or chauffeur can be secured at a small additional cost. Insurance is usually void if the car is operated by a minor, under any circumstances, or by anyone in the absence of the insured, although professional chauffeurs and repair-men properly licensed are not usually construed as exceptions. It is scarcely worth while, at least for a small car, to pay the premium for full protection against losses under twenty-five dollars. Collision-insurance may also be omitted for a small car and careful driver. He is protected as to liabilities, and anyone running into him is liable, so that the actual risk covered by collision-insurance is far less than the premium charged.

All accidents should be promptly reported, both to the police and the insurance agency, although near-accidents and collisions involving no appreciable damage should not be reported to the latter, as such a course gives a possible ground for contesting claims, on the basis of a record of carelessness. Do not deal with any firm or agent that does not pay claims promptly and without quibbling.

Automobiling involves more or less danger from robbers, insane persons, blackmailers, and so on, especially at night and in unfrequented places. Somewhere near Erie, I gave a lift to a lame, elderly pedestrian. He rambled on in German about abandoning his family in St. Louis, a murder, getting work somewhere, and ultimately reaching Germany via New York, and his conversation was so incoherent and sanguinary that it seemed no violation of neutrality to dump him near Dunkirk, instead of risking a long ride after dark with him.

Certain joyriders might well look up the exact location of state lines, with reference to the Mann law. This caution scarcely applies to medical readers, but it is worth while to remember that a man driving alone

may render himself open to blackmail from pure kindness of heart. One dislikes to refuse a child, but there is some danger of being accused of kidnapping, in the case of a runaway, or one may, without realizing it, take

a child so far from home that it will be lost returning. Considerable prudence, therefore, is necessary with regard to picking up strangers.

[*To be continued.*]

Suggestions for the Treatment of Sciatica

By FRANK D. PATTERSON, M. D., Marshall, Michigan

AMONG the various chronic ailments that come to the notice of the general practitioner, there is none that requires any more careful insight into its etiology and pathology than does sciatica; for, as we well know, some cases of this disorder will yield to certain therapeutic methods, while the same treatment has no effect whatever toward effecting a cure in others.

In those affections of the great sciatic nerve where there is simply neuralgia, any counter-irritant, such as mustard- and capsicum-plasters or fly-blisters, applied along the course of that nerve, will soon dispel the pain, as also will belladonna; when, however, the condition assumes the character of a true neuritis, then it is not quite such a simple matter to effect a cure. And, unfortunately, there is no very sharp dividing line between neuralgia and neuritis; although in neuralgia the pain is more fleeting and less definitely localized, while that of neuritis assumes a burning or boring character along the course of the affected nerve, and in general is more constant.

Whether the attack be neuralgia or neuritis, the first pathological condition is one of hyperemia along the nerve-sheath. As this develops into neuritis, there arises a serous effusion within the neurilemma, with more or less breaking up of the white substance of Schwann and eventual involvement of the axis cylinders. This, together with a resulting hyperplasia of the connective-tissue elements, from the chronic inflammation, readily explains the loss of response of the muscles governed by the affected nerve to the faradic and sometimes also to the galvanic current, which one meets with in almost every case of sciatica.

Causes and Symptoms

Among the general causes are various constitutional diseases, pressure, traumatism, autointoxication from within or infection from without, and almost always infection in some form or other as an exciting cause.

The first symptom of sciatica noticed is a localized pain felt about midway between the great trochanter and the tuberosity of the ischium; this frequently following in the wake of lumbago, there being a steady pain from the lumbar region down to where the great sciatic nerve passes between the two heads of the biceps-femoris muscle. As improvement progresses, the pain emerges into the popliteal space, two of the most tender places being the point of bifurcation into the internal and external popliteal nerves and the point on the external popliteal nerve just beneath the biceps tendon. After a while, the pain becomes more superficial and finally disappears.

The Therapeutic Measures

In every case under treatment, attention must be given to every organ of elimination. Usually cholagog purgatives, such as calomel and podophyllin, are indicated, and frequently such other remedies as colchicine, chionanthoid, and bryonin can be used to good advantage. The condition of the teeth should also be looked into, as pyorrhea not infrequently lights up sciatica and other obscure ailments in remote portions of the body. As overwork and exposure to cold are exciting causes of sciatica, it behooves the patient to keep off his feet as much as possible (absolute rest being most desirable), and most carefully to avoid taking cold.

The correction of a displaced uterus or the evacuation of an overloaded bowel will frequently relieve sciatica caused by pressure. Where the sciatica is aggravated by the pressure of a serous effusion within the nerve-sheath, that condition can be relieved by pushing the apocynin, in order to excrete through the kidneys this fluid that is pressing on the nerve-filaments. This pressure can also be relieved by remedies such as atropine and glonoin, which remove internal congestion by opening the peripheral capillaries. Atropine can be given hypodermically in doses of 1-50

grain or even more, up to the limit of toleration, as indicated by the flushed face and dilated pupils; carefully remembering that patients of a sanguine temperament bear this drug badly.

Atropine is supposedly a diliriant, yet, several times in my own experience have I seen it manifest decidedly hypnotic qualities. By dilating the peripheral capillaries, it tends to produce anemia of the internal organs, brain included; this depletion of the brain, of course, tending to induce sleep; and whether it act as a deliriant or an hypnotic is dependent, therefore, upon whether the cerebral or the peripheral action of the drug predominates.

Thiosinamin Cataphorically Used

Since one of the pathological changes of neuritis consists in excessive connective-tissue growth among the nerve-fibers, chromium sulphate, from 4 to 8 grains three times a day, is indicated. For precisely the same purpose, thiosinamin cataphorically employed, can also be used. Being electro-positive, this remedy tends to pass from the anode to the cathode, and in so passing through the redundant connective tissue disintegrates it. The stock solution kept on hand for that purpose is composed as follows:

Thiosinamin.....	grs. 40
Sodium chloride.....	grs. 5
Glycerin.....	fl.drs. 2
Distilled water.....	fl.drs. 6

The usual indifferent copper-pad electrode is applied with the cathode over some other portion of the body, usually the abdomen; while the above solution is applied on absorbent cotton to an electrode of some almost incorrodible metal, such as tin or platinum, attached to the anode, the pad being moved up and down the course of the inflamed great sciatic nerve. No electrode of copper or other corrodible metal should be applied with this solution to the anode, as the metallic salts thus given off seriously interfere with the action of the thiosinamin. A current of from 5 to 20 milliamperes, according to the tolerance of the patient, is allowed to pass along the course of the affected nerve for about ten minutes. If possible, these seances should be held daily, but, if not feasible, then every other day. In fact, where the sciatica is not more than a neuralgia, the galvanic current with any ordinary copper electrode attached to the anode and passed along the course of the great sciatic nerve will be of great service, and is especially indicated

where the muscles are irresponsive to the faradic current.

The High-Frequency Current

However, the most satisfactory treatment in my hands thus far has been the body-vacuum-tube attached to the Tesla portion of the high-frequency coil. One does not, for this purpose, require any of the more elaborate forms of high-frequency apparatus on the market, for the ordinary portable style will answer; although, where there is extremely high blood pressure and hardening of the arteries in patients past middle life, the D'Arsonval attachment of the ordinary portable high-frequency machine lacks the electric potential necessary to make much of a fall in blood pressure. However, the vacuum-tubes attached to the Tesla portion of the portable high-frequency machine accomplish the purpose just as well as when attached to some of the larger machines.

The average commercial current is an alternating one. Where the commercial current is direct, special apparatus is required to convert it into an alternating current, in order to be able to use it with a high-frequency coil. A commercial current usually alternates about 60 times a second, and is what is called a 60-cycle current. The average lamp-socket is one of 110 volts, although there are in use sockets of double that voltage, in which case a comedown transformer is necessary in order to prevent the burning-out of the delicate portions of the coil that are intended for only the 110-volt socket. In passing through the coil, the voltage is increased from 110 up into the thousands, and the alternations likewise are increased from 60 up to several thousand. Were it not for the extreme frequency of the alternations, the resulting voltage would render such a current instantly fatal.

Benefits of High-Frequency Currents

The faradic current—an alternating current of low frequency—causes muscular contractions and, if sufficiently strong, also sensations of pain. As the frequency increases, the pain ceases, but muscular contractions, instead of affecting single muscles, throw whole groups of muscles into tetanic contraction. When the frequency increases to about 10,000 oscillations per second, both muscular contractions and pain cease, but, instead of the muscles as a whole being made to contract, these high-frequency currents produce a general massage of all the individual cells of the body, thereby improving nutrition, increasing the oxygenation of the blood, assist-

ing in the throwing off of waste and improving metabolism in general. Besides this general massage, the ozone given off from the vacuum-tube also acts as a germicide.

The portable high-frequency apparatus has on it a spark-gap, whereby the voltage can be regulated by the pulling out and pushing in of a rod, and another gap, whereby the frequency is regulated, as well as a switch, whereby the commercial alternating current can be turned on into the coil in varying degrees of intensity. In order to prevent burning-out of a fuse and shortcircuiting the machine, great care must be taken, before turning on the current, not to allow the rod of the spark-gap to come into electrical contact with the opposite copper post; and for the same reason the copper surfaces of the frequency-regulator should not come into contact while the current is on.

Care must also be taken not to allow the cord connecting the coil with the handle of the vacuum-tube to come into contact with one's own or his patient's flesh, as severe shocks and burns will thus result, and also this cord should not come into contact with any metal surface, as by so doing the insulation would be burned through.

The vacuum-tube must come in direct contact with the skin over the affected nerve, as thereby a stronger current is tolerated

than could be if administered through the clothing, in the latter instance there being the external irritation of a spark the thickness of the clothing. The vacuum-tube is applied directly to the skin over the nerve, as strong as the patient will tolerate, for from ten to twenty minutes daily. If the patient cannot come every day, he can still be treated to good advantage if he comes every other day; but irregularity of these treatments is inimical to the best results. Sometimes after the first few treatments the increased flow of blood, due to the high-frequency current, will aggravate the symptoms and lead the patient to believe that the treatments are making a bad matter worse, but, if he is induced to continue, he will soon come to an altogether different conclusion. If the blood-pressure is not excessively high, a few sparks over the lumbar region are also of service.

There is nothing about any form of electric treatments that will in any way interfere with the patient's receiving any indicated medication. If these treatments are kept up for from six weeks to two months, and, as toward the last improvement is distinctly in evidence, instead of suddenly breaking off these treatments, longer intervals may be interposed, the patient will usually at the end of that time find himself permanently cured of this troublesome ailment.

America the Beautiful

By KATHARINE LEE BATES

O beautiful for spacious skies,
For amber waves of grain,
For purple mountain majesties,
Above the fruited plain!
America! America!
God shed His grace on thee
And crown thy good with brotherhood
From sea to shining sea!

O beautiful for pilgrim feet,
Whose stern, impassioned stress
A thoroughfare for freedom beat
Across the wilderness!
America! America!
God mend thine every flaw,
Confirm thy soul in self-control
Thy liberty in law!

O beautiful for heroes proved
In liberating strife,
Who more than self their country loved,
And mercy more than life.
America! America!
May God thy gold refine,
Till all success be nobleness,
And every gain divine!

O beautiful for patriot dream
That sees beyond the years
Thine alabaster cities gleam
Undimmed by human tears!
America! America!
God shed His grace on thee
And crown thy good with brotherhood
From sea to shining sea!

Recreations for the Aged

By I. L. NASCHER, M. D., New York City

EVERY form of activity—mental or physical, voluntary or involuntary—must be followed by a period of rest for recuperation. Even the heart has a period of absolute rest in each of its cycles. Prolonged muscular activity produces fatigue, and, if further continued, muscle exhaustion, with attendant loss of muscle irritability, results. Prolonged mental activity gives rise to brain-fag, and, if continued, mental exhaustion, with attendant inability to think, follows. In muscle exhaustion, the muscle must rest; no power of the will is able to move it. In brain exhaustion, the brain must rest and it is impossible to keep it awake.

However, there is in the organism an inherent tendency to activity of mind and body, so that, when the brain and muscles are sufficiently rested, when muscle irritability has been restored and the contracted neurones have regained their normal state, it requires a powerful effort of the will to maintain either in inactivity for even a few minutes. It is almost impossible to produce a mental blank by force of will, and likewise it is extremely difficult to maintain a muscle at complete rest for even a few minutes. Artists' models find it extremely irksome to maintain a prolonged pose, even one that permits of muscular relaxation; so that, unless one is trained to this restraint, a few minutes of such enforced inactivity will cause restlessness. Thus the necessity for physical activity is evidenced by the unconscious crossing and recrossing of the legs, scribbling on paper, twirling the fingers, automatic movements of the infant, and even changing one's posture during sleep.

Complete relaxation is impossible, except in pathologic conditions, as, for instance, in deep narcosis, when the motor centers are inhibited. Any relaxation of one set of muscles causes contraction of the opposing set, and in a short time the contracted set will demand relaxation. Psychologists tell us that, except in complete mental exhaustion, the healthy mind continually is active, even though in sleep it does not receive external impressions, or, receiving them, it does not respond to the stimulus except by unconscious reflex action.

Inasmuch as, after fatigue has set in, mental and physical activity can be carried on only with difficulty and distress, persons

quit working when the stage of fatigue has set in: they rest or sleep or take up some occupation that does not involve the tired-out tissues. If the latter, substitutive task is of a pleasureable nature, it constitutes recreation. We do not know why the sense of pleasure has a beneficial effect upon the organism; we do know that it acts as a mental and physical stimulus and that under its influence more work can be done than when this agreeable stimulus is absent.

Recreation should be the antithesis of the work that makes it necessary. On this principle, mental work calls for physical recreation, physical work calls for mental recreation. Sensuous recreations may take the place of either whenever the tired-out tissues are not involved.

In selecting the appropriate recreation, we must consider the mental and the physical capacities of the individual, as well as his tastes, and also the character of the work that gave rise to the need for recreation. In the aged, we also must consider their sight and hearing, besides certain mental and physical peculiarities. To the latter, I wish to call particular attention, for, failure to do so often is responsible for irrational recreations provided for the aged, with the consequent disappointment for those who aim to please the old folks but ignominiously fail.

It is a common occurrence, for instance, that young people take the old folks to a theater; however, very soon after the performance has begun, the old people are fast asleep. The same with, say, the circus or lectures. They take the old man to view a parade, but in a few minutes he will want to go home. The old lady may like the outing undertaken, but she will want to stay at the foot of the first hill encountered. The young who do not know the limitations to the mental and physical capacity of the aged frequently urge upon the latter what they intend as recreations, but which in fact to them constitute tasks, even laborious work.

Aged persons, it must be remembered, cannot do much physical work, while mental tasks soon bring on brain-fag. Still, they require recreation after such efforts, and, as recuperation in the aged takes place much slower than earlier in life, the recreation must be one not rapidly causing fatigue. A given exertion that a young person is able

to continue for hours may tire out an aged man or woman in a few minutes; so that, in selecting physical recreations for the aged, we must choose those which permit combining mild exercise with frequent periods of rest. Mental recreations should not be such as to confuse the mind or entail serious thought. The reason why the old man dozes off at the sermon, lecture or play is not that he is inattentive, but his unduly strained attention brings on brain-fag.

Interest in sensuous recreations, those that appeal to the eye and ear, wanes with failing eyesight and hearing, but this interest can be maintained through proper attention to these defects. Moreover, the sensuous recreations are the forms most agreeable to the aged, provided they can be enjoyed without the discomfort of straining the eyes and ears.

Why the Aged Doze Off

Dividing the forms of recreations into three classes, namely, physical, mental or intellectual, and sensuous, we find that most of them belong to more than one class. On the other hand, the best forms for the aged are those belonging to one class alone.

Take the drama, for example. In the ordinary play, the plot requires intellectual activity, the acting affects the emotions, while sight and hearing must be alert in order to convey properly the impressions to the brain. The ballet, on the other hand, produces a pleasant visual impression without requiring any intellectual activity; the impression is similar to that produced by a display of fireworks. While the ballet is agreeable, owing to the harmonious and rhythmic motion, the dance, with its riot of motion, quickly confuses the senile mind and thus causes brain-fag. In the song, there is an appeal to the intellect or emotions, and the melody produces an agreeable auditory impression. In music, there is the auditory impression, although there also may be an intellectual or emotional reaction owing to the association of the composition with a song or perhaps to the character of the air itself. Familiarity with a play, song or composition lessens the mental strain required to follow and remember it.

When an aged man goes to the play with a complicated plot, he will fall asleep, because the intellectual activity necessary to follow the plot produces brain-fag; the reaction following stimulation of the emotions is mentally and physically depressing, and, unless he has a good seat, he must make a conscious effort to see and hear well, and

this is a task which itself requires rest. If the sight and hearing are good, visual and auditory impressions will not tire, unless prolonged or there is a complexity of sights or sounds that will make for mental confusion. The old man will be able to watch a one-ring circus for hours; let him try to follow a three-ring circus and he becomes confused in a few minutes. In like manner, the production, at grand opera, of arias, by the finest of singers and orchestras, will soon bring on brain-fag, while simple songs or melodies will be grateful.

Importance of Sensuous Impressions

Sensual as well as sensuous impressions play a part in the recreations of aged men. We need only refer to the ancient joke about the baldhead row in the theater where there is a chorus of pretty, shapely women. We may try to delude ourselves as much as we please with the idea that the pleasure a man finds in looking at a bevy of pretty women on the stage is purely esthetic, we cannot change the fact that that is nothing but purely conscious self-delusion. The old man who takes a front seat in the theater does not try to deceive himself, although he may give poor eyesight as an excuse.

With advancing age, the mental faculties are not as alert as formerly and the old man does not grasp readily humor depending upon a quick appreciation of a pun or *double entendre*. The farce and extravaganza that are replete with ludicrous situations and funny incidents are relished, while the delicate humor of the society-play is wasted upon him. To the simple minds, the broadest kind of farce will appeal most strongly, especially if there are antics of the Punch-and-Judy order interspersed with colloquial puns.

Aged opera-goers find the greatest pleasure in plays with which they are familiar, while new compositions will confuse and bring on brain-fag. Those who are fond of music and song find a far greater recreation in the lighter musical plays. The musical comedy—with its gauzy plot that requires little mental effort to follow, the freedom from strong emotional incidents, the melodies and pretty stage pictures, which appeal to the senses—is perhaps the best form of dramatic recreation for the aged. Here, again, we must consider the sight and hearing of the individual, and, if these are impaired, he must get a front seat to enjoy the play. But many aged persons who would find a grateful recreation at the musical comedy find the

expense of front seats prohibitive, and to such I should not hesitate to recommend a front seat at one of the better burlesque theaters. Many of the performances, given at these theaters under the name of burlesque, are simply musical comedies with farce incidents, conducted on a cheaper scale.

In all forms of the drama, the tastes of the aged person must determine the character of the performance. Emotional plays, however, frequently produce depression, and a play with a sad ending may produce a prolonged melancholic state. The aged like revivals of plays, and these do not require the mental efforts that must be exerted to follow a new play. Motion-pictures depicting plays with intricate plots requiring constant attention soon tire the mind. Comedy-pictures are generally relished; however, this form of amusement is generally detrimental to the aged, on account of the eye-strain produced by the flickering pictures; while, besides, in the small crowded houses the air becomes foul and stagnant and affects the lungs.

Lectures and Reading

A lecture is no recreation for an aged person, unless it is frequently broken by illustrations. If there are no breaks, the aged soon fall asleep through excessive attention, with consequent brain-fag. I know from personal experience that aged physicians generally find it difficult to follow a paper taking from fifteen to twenty minutes to read. They either forget the early part of the paper or toward the end the mind becomes tired and thus they can pay no attention to the latter part.

Reading is an excellent form of mental recreation, but it is no recreation from a regular task already involving reading or looking at books. We find two classes among aged readers: those who read a short time, remember what they read, and must then stop because of brain-fag; a second class, those who read for hours, forget what they have read a few minutes before, and, if they fall asleep while reading, have, upon awaking, no recollection of what they did read. The former read the more serious works and retain impressions of what they have read. Those of the other class take up light reading, and the impression produced is but momentary; it is no mental task and does not produce brain-fag. Reading is a recreation from mental labor involving calculation, while card playing is a mental recreation from

labor involving reading and reasoning, but not labor involving calculation. Card-games which require much thought or memorizing soon tire the player. Chess playing likewise soon tires an aged individual, unless he is an expert and has a weak opponent. When other games of a similar kind are taken up as recreations, the mental capacity must be considered.

Physical Exercise a Rest From Mental Exertion

The best form of recreation from mental labor is physical exercise. Here, again, we have to deal with the physical capacity of the individual. An old man cannot take part in the strenuous athletic sports or gymnastic exercises, although many aged persons keep up systematic calisthenics. This, however, is taken up as a routine exercise and not as a recreation. Golf, croquet, outdoor bowling are all good physical recreations for the old man. Fishing, when the fish bite, is a most enjoyable recreation, and it can usually be graded, from the lazy fishing for flounders from a flat-bottomed moored rowboat to the more strenuous fishing for pickerel and trout in inland waters and the blue-fish and larger game-fish in the ocean. Hunting for small game is good recreation as long as the arm is steady and the sight is good.

Further, witnessing athletic and other sports constitutes a sensuous form of recreation in which the emotions are involved. Whether it prove beneficial or detrimental will depend upon the temperament of the individual. If he becomes greatly excited over the outcome of a race or game, it will do him no good to witness it. If he is naturally cool and accustomed to such races or games, it will do him no harm. The presbyopic eye does not readily adapt itself to varying distances, and this spoils the pleasure of seeing a horse-race or any other race in which objects at various distances must be seen at the same time.

Walking should be taken up, not as a recreation, but as a routine exercise. As the aged sometimes become absentminded and sometimes suffer from vertigo, they should have agreeable company on their walks. For the purpose of recreation, the best walks are those taken in unfamiliar places, with mild changes of grade and frequent opportunities for rest. Pleasant company is indispensable on such walks. Aged persons sometimes dance as a recreation, more often to show that they are still spry and active.

If they have kept up these terpsichorean exercises from earlier life, moderate dancing will do them no harm if they stop as soon as

dyspnea, palpitation or fatigue sets in. However, if one has not danced for years, the exertion may be speedily fatal.

The Emergency Treatment of Poisoning

Practical Suggestions for the General Practitioner

By SAMUEL C. BEACH, M. D., Evanston, Illinois

[Concluded from page 340, April issue.]

IN THE preceding article, the various modifying influences or conditions produced by states of the body at the time a given poison is taken were mentioned; also the emergency treatment—consisting in the administration of the various household remedies that are nearest to hand and most applicable for antagonizing the action of the poison. The physician will always have his hypodermic case with him, and, consequently, have available a considerable number of antidotes on which to rely; while, in addition, he is likely to find in the house flour, starch, vinegar, ammonia, whiting, bran, wall-plaster, and dishwater. This list of articles (more or less complete) should provide him with quite an assortment to work with; moreover, in case he is at some distance when the call reaches him, he can tell the anxious relatives over the telephone how to utilize these makeshifts pending his arrival.

The Needful Universal Antidote

However, it is decidedly advisable for every physician always to carry with him a universal antidote, one that may be given in those cases where the nature of the poison is not definitely known.

The "*universal antidote*" that has attained the greatest reputation is composed as follows:

Pulverized charcoal (U. S. P.).....	2 parts
Tannic acid.....	1 part
Magnesia (calcined).....	1 part

This powder is kept in a tightly closed bottle. The dose, at haphazard, is a teaspoonful stirred into a glass of water. The charcoal acts physically, absorbing the alkaloids and various other poisons, thereby retarding their absorption into the system; the tannic acid precipitates and thus renders insoluble the alkaloids and also various metallic poisons; lastly, the basic magnesium oxide neutralizes acids, while, next to ferric hydroxide, it is the best antidote we have for arsenic.

A dose of this antidote (in a doubtful case) should be given at frequent intervals. Also, the stomach should be washed out shortly after each dose, except perhaps the last one, which may be allowed to remain.

It is the absorbed poison which does the most harm, usually; therefore, elimination should be promoted in every possible way—through the skin, the kidneys, and the bowels. Water should be given freely, also diuretics, and heat be applied to the back in order to stimulate the action of the kidneys and assuage irritation. Frequent catheterization should be done. Finally, physiologic saline solution should be administered by rectum, intravenously or subcutaneously. This latter method was used in a case where 8 grains of morphine had been taken and the usual approved methods of treatment had been tried without benefit; but when the injection of the saline solution was given, the patient improved rapidly and recovered completely. The action seems to be exerted in the way of promoting elimination.

Arsenic

Arsenic is found in the rat-poisons and various paris-green preparations on the market, and it, therefore, either by accident or design, is used as a poison more often than almost any other drug. Arsenic was formerly used in the manufacture of wall-papers and certain aniline dyes, but its use for this purpose has been discontinued. In any of its forms, it may produce poisonous effects, these being classed under the three heads of acute, chronic, and nervous.

Acute Poisoning.—The symptoms of acute arsenic poisoning usually appear within an hour or two, but may be delayed by the action of opium or alcohol. An acrid, burning sensation is felt in the throat and nausea and vomiting soon follow. There is much depression, with a severe burning pain in the stomach and bowels, which latter become tender and sensitive to pressure. Intense thirst, only aggravated by drinking water,

then occurs, and, later, vomiting, the latter often bilious and bloody. Purging is severe and accompanied by much tenesmus. The stools are like those of cholera, bloody and mixed with mucus. Swallowing soon becomes difficult, the tongue becomes dry and furred and there is frontal headache, dizziness, photophobia, and general depression. The urine is scanty or suppressed, the heart's action becomes irregular, the skin cyanosed, and the patient sinks into coma, ending in death, possibly under convulsions.

It is estimated that arsenic has caused more deaths than any other poison except opium and its derivatives. It is so cheap and easily obtained—as almost no restrictions are placed on its sale—and is almost tasteless when mixed with food, that naturally it is more often resorted to. The use of arsenic by undertakers, for the purpose of preserving corpses, makes the detection of the criminal poisoner difficult and sometimes impossible.*

Arsenic is placed on the market in the form of rough-on-rats, buffalo carpet-moth annihilator, tough-on-mice, fly-papers, and various other vermin exterminators.

The fatal dose of arsenic has been variously estimated, from 2 grains of the white arsenic up to 60 grains.

Treatment.—Arsenic has the honor of having named for itself the only official antidote provided by the U. S. Pharmacopeia—the ferri oxidum hydratum cum magnesia. This is given to convert the arsenic into ferric arsenate, an almost insoluble compound.

Give the antidote at once, then thoroughly wash out the stomach. This must be done carefully, and repeated, inasmuch as there is a tendency for arsenic to stick to the walls of the stomach. It is a good plan also to give hot milk and water repeatedly, washing out the stomach after each administration. When you *feel sure that all the arsenic has been removed*, give a final dose of the antidote; and this should be left in the stomach for a time.

In an emergency, the antidote may be extemporaneously prepared by mixing tincture of ferric chloride with magnesia and giving the whole mixture as it is. Or, ammonia water may be used in place of the magnesia; but in that case the mixture should be strained through a cloth before giving, in order to remove surplus ammonia.

Chronic Poisoning.—This will take place when for any reason the administration of

arsenic has been kept up too long or when the patient has an idiosyncrasy against the drug. Its first signs are: puffiness of the lower eyelids, looseness of the bowels, and general edema. The discontinuation of the drug will allow of elimination of the portion already taken. It must not be forgotten that a certain tolerance for the drug is established by continued use; so, inquiry should always be made as to whether it has ever been used before. The arsenic-eaters of Styria (lower Austria) and of India take from 1-2 to 2 grains once a week for years, in order to increase their endurance, and they never suffer poisonous effects from this practice.

Cocaine

Cocaine is taken to produce a pleasant (?) effect or excitement, a form of intoxication, the subject becoming mentally stimulated and nervously excited; but he soon finds it impossible to go to sleep and gradually requires more and more of the drug to produce an effect. It is at first a cerebral, cardiac, and respiratory stimulant; but these effects are followed by a corresponding depression, which, if severe enough, may call for treatment.

Acute poisoning begins with dryness of the throat, tongue, and nose, faintness and nausea, dilated pupils, talkative nervous excitement, and rapid breathing. This is followed by the stage of depression, in which the breathing is shallow, the heart's action rapid and weak, and the face pale; then follow surface anesthesia, muscular twitchings and paralysis from overstimulation. Death is usually caused by paralysis of the respiratory apparatus.

Treatment.—If the patient is seen in the first stage, give adrenalin chloride cautiously—this has been followed by excellent effects in most cases. Ammonium carbonate, nitroglycerin, and strychnine are useful. Artificial respiration should be practiced when indicated. Of all the antagonists, morphine seems to act more favorably and quicker than any other.

Habitual users should be deprived of the drug at once, and completely. No harm will follow, while gradual reduction of dosage has been found to be almost impossible; although, if you can secure the confidence of your patient, this can be done. Preliminary cleaning out by means of cathartics, hot baths, and diuretics, is of value. Tonics, especially arsenic, have been found to be of value in assisting regeneration. Finally, do not lose sight or complete supervision of

*Various governments, as some of our states, now prohibit this use of arsenic.—Ed.

your patient for at least six months, or even one year, as relapses are common.

Coal-Tar Analgesics

Acetanilid, *antipyrin* and *phenacetin* may be considered together, inasmuch as their action is much alike and they all form the basis for headache-tablets and -powders. All three are heart depressants, and large doses are followed by chilliness, nausea, vomiting, weak and slow pulse, cyanosis, and eventually death.

Treatment.—After washing out the stomach, stimulants—notably ammonia, strychnine, atropine or caffeine—should be given. Apply heat to the body and extremities. Oxygen inhalations or saline infusions may be necessary in severe cases.

Formaldehyde

Formaldehyde, or *formalin* (which latter is the usual 40-percent solution in water), has been a cause of poisoning both by inhalation and by swallowing. Inhaled, the vapor is a violent irritant to the lungs, while either inhaled or swallowed it produces suffusion of the eyes, congestion of the mucous membranes, and staggering gait and stupor lasting many hours. Later, changes in the liver and kidneys have followed, in severe cases amounting to necrosis. It hardens and dries tissue with which it comes in contact, and this effect is seen when it has been swallowed. Degenerative changes in the blood have followed even the continuous use of milk or other articles of food in which this agent has been used as a preservative.

Treatment.—Inhalation or internal administration of ammonia water or of the gas immediately destroys the formaldehyde. This must be done cautiously, however, as the remedy is itself irritating.

The Mydriatics

Belladonna, *stramonium*, and *hyoscyamus*—these three drugs and their alkaloids, (atropine, daturine, hyoscyamine, and scopolamine) may be considered together, since their actions are nearly identical.

The one prominent and characteristic effect

of these alkaloids, that of dilating the pupil, serves to class them as mydriatics. Their poisonous effect is shown by dryness of the mouth, throat, and skin, dilated pupils, and a wakeful, talkative delirium. A scarlet rash may appear on the skin. The pulse is rapid and wiry, the respirations are deep and quickened, and there is increased temperature. These symptoms are followed by picking at imaginary objects, fall of temperature, rapid shallow breathing, stupor, and finally death by asphyxia.

Treatment.—Wash out the stomach with a tube, as emesis is difficult to produce. *Pilocarpine* or *morphine*, hypodermically, may be used, but with caution, as their action is variable. Practice artificial respiration *persistently*. Apply cold to the head.

Aconite

Aconite poisoning may occur from mistaking the root for horse-radish or from taking some of the medicinal preparations. The symptoms consist in a sensation of tingling and numbness in the lips, tongue, and throat, this soon becoming general all over the body. There is nausea, but vomiting is not usual, as the nerves of the stomach are paralyzed. Lowering of temperature follows, with great muscular weakness, and the skin is covered with a cold, clammy sweat. Death finally comes from cardiac or respiratory failure.

Treatment.—Give atropine and digitalis as physiological antidotes, while using the tube to wash out the stomach. Keep the patient quiet and apply heat to the body.

Gelsemium

The most prominent symptom of poisoning is muscular weakness. The patient can hardly open the eyes or close the mouth. The heart is profoundly depressed and the pulse is slow and feeble.

Treatment.—Morphine and atropine combined are given hypodermically, and the tube is used to wash out the stomach carefully, using some tannin solution when possible. Strychnine and digitalis may have to be given; also external heat applied to the body.

[To be continued]



What Others are Doing

AS TO WAR-PSYCHOSES

In these turbulent days we read much about the baleful effects of the war upon the mentality of the battling soldiers—men gone mad in every degree of intensity, and suddenly, for a few days or weeks or some, perhaps, incurably.

However, in the opinion of Doctor Weygandt (Medical Society of Hamburg: *Muench. Med. Woch.*, 1914, p. 2315), there is, contrary to current belief, no such thing as a real war-psychosis. Whenever such attacks of insanity occur in the field, they are based upon an existing predisposition and merely become active through the nervous strain and exhaustion to which the men are subject.

DIETETIC TREATMENT OF CARDIO-VASCULAR DISEASE. THE "KARELL TREATMENT"

In the acute form of heart affections, Satterthwaite (*Interst. Med. Jour.*, Jan., p. 7) says that nothing but fluids should be given. If milk is well tolerated, it may be taken to the amount of 1 1-2 to 2 quarts a day. Some prefer buttermilk, and Bulgarian sour milk is popular. The selected form of milk food may be diluted with Vichy or some alkaline water when plain milk is not well tolerated.

The Karell dietetic treatment, which has been employed by Lenhartz in his clinic, in Hamburg, for eighteen years, has met with much favor. During the first six days of this treatment, 7 ounces of milk, boiled or raw, hot or cold, is given at 8 a. m., 12 m., 4 p. m., and 8 p. m.—a total of 28 ounces daily. During this period, no other aliment is allowed. During the following two to six days, one egg is allowed at 10 a. m., and zwieback at 6 p. m.; afterwards two eggs and bread; and, later, a little chopped meat, vegetables or rice pudding, until at the end of the twelfth day the ordinary diet is resumed. During this form of treatment, the bowels should be kept open.

The fundamental rule in the dietetic treatment of cardiac disease of Satterthwaite is that the diet should be sparing. If the patient

is kept in bed, food should be given at intervals of two to four hours, and the last meal of the day should be taken not less than two or three hours before retiring. Great care should be taken to avoid gastrointestinal disturbances, remembering that red meats and carbohydrates (which cause fermentation) are the chief cause of alimentary trouble.

Except in emergencies, the patient should be given no alcohol or malt liquors, and coffee and tea should be prohibited, as a rule. Water should be taken freely if there is an associated lithemic condition, which is likely to be the case; but it must be remembered that, by adding to the quantity of circulating fluid, we are throwing an additional burden upon a weak heart.

SEVERE ANEMIAS IN CHILDREN

Severe anemias in children not infrequently are a sequel to infectious fevers, concerning the nature of which a limited number of hematologic studies have been conducted, at the University Children's Clinic at Erlangen, by Ernst Stettner. These cases of splenic anemia, the result of a rapid degeneration of the hemic elements, according to the author (*Jahrb. f. Kinderh.*, Bd. 80, H. 5), are amenable to treatment, the aim of which must be energetically to oppose to the pathologic process a vigorous regeneration of the hemopoietic mechanism; the prognosis depending entirely upon the relative severity of the affection.

As his greatest therapeutic aid in combating this degenerative process, Doctor Stettner considers sunlight (or, of course, its artificial substitute); to which may be added cautious hydiatric measures (the nature of which, however, is not hinted). Sometimes the actinic rays have proved beneficial. Among medicinal agents, arsenic and iron are to be tried. The diet must be a light mixed one, never onesided; consisting of vegetables, with not too much meat.

Thus, we are assured, even the most severe forms of such splenic anemia can be arrested during childhood, and a complete cure effected. Extirpation of the spleen,

in a few extreme instances, has been followed by satisfactory results; still, this is a measure not without considerable danger.

OIL OF TURPENTINE HYPODERMICALLY IN ZYMOTIC DISEASES

Péhn and Dillon have been using, on a large scale, plain oil of turpentine, hypodermically administered, in diverse diseases caused by microbic parasites, principally in children, and, as they assert (*Nouv. Reméd.*, 1914, p. 194; cf. *Ther. Monatsk.*, 1915, p. 219), with highly gratifying results. The authors employ this medicament principally in bronchopneumonia—primarily and secondary, especially after measles and diphtheria—but also in the infectious generalized forms of disease, including measles, scarlet-fever, complicated diphtheria, erysipelas, tuberculosis.

As a rule, these injections of oil of turpentine—which are declared to be absolutely [?] without danger—were found to mitigate the fever, the temperature generally dropping on the very first day. However, the most satisfactory results were attained in cases of true bronchopneumonia.

We should expect these injections to be very painful, but no information is given on this point. What reader of CLINICAL MEDICINE can enlighten us?

COLLAGOL INJECTIONS FOR GONORRHEA

Endless, almost, says V. L. Neumayer (*Muench. Med. Woch.*, 1915, p. 423), is the number of antiseptics, particularly silver compounds, that find application in the treatment of gonorrhea, but one there is about the use of which in this infection he never heard or read; and this the very one that virtually alone, in the era of asepsis, has been able to maintain itself for use upon the tissues.

"I mean the collargol of Crédé," Neumayer continues, "and this preparation thus held its own solely by virtue of its being so very free from irritating qualities, and, yet, such a relatively powerful germicide. Moreover, collargol absolutely does not precipitate albumin. In fact, its nonirritant nature is so pronounced that W. v. Oettingen (in his book on military surgery) relates that he feels no compunction about inserting the tablets of this substance into the injured brain-substance.

"But, the author argues further, "all these are properties that particularly seem to

recommend collargol for the treatment of gonorrhea. Assuredly, through its presence, no gonococci can escape its germicide action by being enclosed in coagulated pus or tissues; for, no albumin precipitation takes place."

Doctor Neumayer, serving in the Austrian army in Bosnia, did not have at disposal the necessary supply of the material; however, in the few instances in which he has tried it in the case of soldiers, the results obtained were gratifying, while the subjects were greatly pleased by the absence of irritation produced by the injections. He utilized solutions of 2- and 3-percent, dissolving the handy tablets in sterile water.

SUCCESSFUL TREATMENT OF GAS-PHLEGMONS, AND SUGGESTION FOR PROPHYLACTIC VACCINE

Since the European conflict developed into trench-warfare, tetanus and gas-phlegmons have occurred in unheard-of frequency, so that reports on the experience with these deadly complications fill all medical literature. Out of the mass of these, we pick one dealing with gas-phlegmons, contributed to the *Muenchener Medizinische Wochenschrift* (1915, p. 1027) by Professor Fessler of a Bavarian military hospital, because of certain suggestions that seem worthy of special attention. We will not stop to note his particular method of managing this form of wound infection, but want to call attention to his positive assertion that since its adoption (in a large experience) he has not lost a single victim, while at the beginning of his work in the hospital the deaths were many, often occurring by the fourth day.

Taught by sad experience, Fessler—contrary to the present teachings, that bullet-wounds must not be meddled with—now systematically and carefully examines daily all wounds inflicted by bullets or shrapnel (when contamination by soil is assumable), both as to the nature of the secretion and to detect any gas bubbles. Then, at the least suspicious signs—malodorous pus and more than traces of gas bubblings, besides reddening of the skin and painful induration—he cuts, deep and long, laying the infected area wide open. And, decision must be prompt, for, a delay of but a few hours may prove fatal. Further treatment and amputation are questions of the conditions revealed; however, filling out the lesion with balsam of Peru now constitutes a favorite procedure with the

author, while aeration and exposure to the sun's rays are helpful.

The most dangerous period is from the second to the fifth day after the wounding. The question of immediate amputation will depend upon the state of the heart and kidneys and the patient's general condition.

In this way, gas-phlegmons can be prevented from spreading—with the inevitable dire results—and the necrotic tissues will be cast off rapidly, so that inside of a week healthy pink granulating surfaces will be seen.

Another interesting feature of this article is the suggestion made by Professor Fessler that attempts to develop an immunizing vaccine or serum against this infection decidedly are in order, seeing that success has been attained in this direction against tetanus—an infection also derived from the soil.

As to the latter, Fessler testifies that he has not witnessed a single attack of this horrible concomitant of the trench-warfare in northern France (with its clayey soil) since he made it a practice to give every wounded soldier under his care a prophylactic injection of (German) tetanus-antitoxin. It certainly does seem that an antitoxin or a bacterin could be produced; the author suggests an animal-serum derived from the bacillus perfringens.

FORTY-SIX CASES OF PELLAGRA TREATED WITH SODIUM CACODYLATE

A report of 46 cases of pellagra treated with sodium cacodylate, this being the only medication, is contributed by B. H. Booth to *The Southern Medical Journal* (see February, 1916, p. 124). No change was made in the patients' diet, work or environment, and the improvement is therefore ascribable to the arsenical preparation and to this alone. Doctor Booth injected the sodium cacodylate deeply into the muscular tissues in 7-grain doses, at intervals of about a week. The dose to children was adjusted to the patient's age. In 1914, 16 cases of pellagra were treated with this drug, and in 1915, 30 cases. There has been only one death. All of the remaining patients, Doctor Booth reports, are now apparently well at this time so far as he can ascertain. In not one of the 16 cases treated in 1914 has there been any symptom of return.

While Booth believes that a faulty diet is a predisposing cause of pellagra, in this respect agreeing with Goldberger, he is not inclined to consider this the only cause, believing that

the disease is caused by an infectious organism of some kind. He does not pretend to say whether the sodium cacodylate acts directly on this organism, or simply promotes the nutrition so that the body is better able to withstand the attack of the infectious agent. However, he believes that the arsenic acts in both ways. At any rate, the improvement is so manifest and so rapid that he looks upon the cacodylate as a specific.

THE TREATMENT OF THE DIPHTHERIA CARRIER

Now that we know that diphtheria bacilli are frequently carried in the secretions of the throat and nose in otherwise healthy individuals, it is becoming a problem as to how we should treat cases of this kind. From an editorial in *The Journal of the American Medical Association*, we learn that 4 1-2 percent of the patients admitted to the scarlet-fever wards of the Willard Parker Hospital, New York, were diphtheria-bacilli carriers, and in one-half these cases the bacteria were virulent. It is, however, a relief to learn that the organisms grown from carriers are very often nonvirulent, and that these non-virulent diphtheria bacilli are harmless and not to be feared. We can determine whether or not the organisms are of the virulent type by simple tests upon guinea pigs.

When, however, the organisms are found to be of the virulent form, it is no easy matter to destroy them. The latest remedy suggested is iodized phenol, advocated by Ott and Roy, containing 60 percent of phenol and 20 percent each of iodine crystals and glycerin. The application of this mixture is slightly painful for a few moments, producing a superficial scar, which disappears in a day, leaving a reddened, clean surface which soon becomes normal. Thirty-five percent of the carriers on whom it was tried were cured by one application, twenty-nine percent by two applications, and twelve after three. In only one case were more than six applications required.

Hektoen and Rappaport advised the local application of powdered kaolin, this substance acting mechanically and serving to remove the bacilli from the nose and throat in a very large percentage of cases. Wood has employed suspensions of lactic-acid bacilli successfully.

There are, however, many cases which resist the antiseptic and mechanical applications heretofore employed. Usually when such resistance is encountered, the bacteria

are buried in the deep pockets of the tonsils, and tonsillectomy is required for their complete elimination.

In a paper dealing with this subject, printed in *Paris Medical* for March 4, 1916, Paul Carnot advises irrigating the throat with a mixture of Labarraque's solution, consisting of one tablespoonful of this solution to a liter of water. In other cases he finds the local application of iodized glycerin, camphorated phenol or eucalyptus oil of value. Sometimes inhalations of eucalyptus or gomenol are of value. However, in severe cases he has found it desirable to resort to local applications of an antidiaphoretic serum. He prefers Martin's antibacterial serum for this purpose, this being obtained by injecting the horse supplying the serum not only with the diphtheritic toxin but also with the bodies of dead bacteria in order to produce antibodies as well as antitoxin in the serum to be employed. Martin incorporates this serum with a gum, making pastilles which the patient can carry in his mouth and suck an hour at a time, thereby keeping the pharynx constantly in contact with the serum. In some severe cases, Ravaut has combined with these Martin serum pastilles a certain amount of arsenobenzol and powdered camphor, talc and boric acid being used as vehicle.

Carnot declares that this method of treatment will succeed in the vast majority of cases and usually in less than fifteen days.

SYNTHETIC CAMPHOR EQUAL TO THE NATURAL

Corroborating previous investigators, C. Bachem, of the Pharmacologic Institute of Berlin (*Med. Klin.*, 1915, p. 425), reports, as a result of animal-experiments, that synthetic camphor in every way parallels the action of the natural product, and, thus, may freely be prescribed in lieu of the latter.

EXTEMPORIZED CONTINUOUS BATH

In a discussion by army surgeons, at the Medizinisch-Naturwissenschaftlicher Verein of Tuebingen, relative to makeshifts in wartime, Doctor Sellheim (*Muench. Med. Woch.*, Jan. 5) demonstrated how an ordinary bathtub can easily be made to serve for the continuous bath. A large, strong bed-sheet is disposed in the tub, the patient is placed into it, and then the edges all around are stretched so as to support the body and head in the desired position, and thus fastened to the top of the tub. [Presumably, if the top is

not of wood, cords might be attached to the sheet and extended to staples driven into the floor.—Ed.] A small tank is fastened before the hot- and cold-water faucets and a thermometer set into this. In this way, the temperature may be adjusted and the flow regulated; thus keeping the bath continuously at the desired temperature.

COPPER AS A CURATIVE AGENT IN TUBERCULOSIS

Copper, once quite a favorite, had virtually lost its position as an internal medicament, but of late promises to reestablish itself in the materia medica, the literature on it in the continental medical press growing apace. Various references to this subject have appeared in these pages for the last few years (notably about copper sulphocarbolate as an intestinal antiseptic), and only very recently we printed an abstract from an article by Strauss on the action of copper salts (as proposed by Finkler) in tuberculous disorders.

Subsequent to the latter, the Countess von Linden, of Bonn, one of the champions, has essayed to refute (*Muench. Med. Woch.*, 1915, p. 111) those who deny any special and selective virtues adhering to copper with respect to tuberculosis; particularly contradicting Moeves and Jauer (*loc. cit.*, 1914, No. 26), who, basing upon experiments with inoculated cavies, declared it rather to shorten the life instead of causing benefit (compared with control-animals).

Since she, Dr. von Linden, has, during the past three years, witnessed such remarkable curative effects from copper salts in 8 separate experimental series conducted with tuberculized cavies, she endeavors to find an explanation for this discrepancy. And this she believes to find in the unequal conditions under which each has operated, when they, certainly, should be absolutely alike. And this is not so in the case of the two critics mentioned.

Certain factors must be borne in mind in this connection; namely: The virulency of the infection. The more acute the course of the tuberculous infection and the sooner it ends in death, the less chance is there for the medicament to exert its influence upon the disease-process. For, the copper does not immediately upon its entrance into the circulation effect disinfection of the blood and tissues, that is, does not forthwith annihilate the noxious bacteria. Rather, a certain period must lapse before the tuberculous niduses can saturate themselves with the

copper and then convey a surplus to the pathogenic bacilli. Thus, the copper-therapy leads only slowly and gradually to the extirpation of the parasites causing the disease and to the subsequent reaction of the diseased tissues—that is to say, of the healing of the niduses.

The tuberculous process, then, will be arrested in proportion to the relative virulency and resistance of the disease-germ.

The control-cavies inoculated by the author died in from eight to sixteen weeks, and only a very few before that time; none of those of Moeves' and Jauer's, however, lived longer than six weeks—proving extreme virulency of their culture.

Another important fact to be considered is, the degree of the pathologic-anatomic changes effected in the cuproized animals. This, briefly, depends upon the number of bacteria introduced, the rate of their multiplication, their toxicity, the period when treatment begins as well as its intensiveness; and these changes, or lesions, are greater in proportion to the virulency of the bacilli introduced, to the reduced resistance of the host, to the postponement of the treatment, and its lack of intensiveness.

The author injected from 1.2 to 2 mg. of the copper salt, and a total, per course, of from 7 to 10 mg. The critics injected a total of only 1.2 to 2.4 mg., in doses of from 3-10 to 5-10 mg. (or, averaging but 1-3 the proper dosage); in addition to which, the tuberculosis cultures used by them were, as shown, greatly more virulent; so that the animals died before the copper could become effective.

A decidedly interesting statement is that answering the critics who allege fluctuations in the body-weight of the experimental animals. This, Doctor von Linden, replies, only can mean irregular and bad feeding or that the cavies had a stall-infection (e. g., with diplococci). When the cavies inoculated with tubercle-bacilli are healthy and well cared for, they invariably gain in weight during the first weeks, which may attain to a maximum of 250 Grams. More interesting yet, the animals submitted to the cupric therapy gained from 700 to 900 Grams—from 300 to 350 percent (roughly) over the control-animals. A remarkable fact, assuredly!

The detailed data of these experiments, as also any further observations, the author promised to publish in the *Beitraege zur Klinik der Tuberculose*.

The author concludes by citing a number of investigators who have written on this sub-

ject, not at all unanimous as to the beneficial effects of the copper-therapy, some of whom deny all influence whatever. Inasmuch as lecithin has been associated with the copper salt by Finkler, Strauss, and von Linden, a few of the doubters (Mehler and Ascher) are inclined to ascribe any benefits from the treatment witnessed to that exciter of leukocytosis; still, later, they have declared that borcholin [?] when associated with copper cured tuberculous lesions in humans much quicker than does the borcholin alone. Junker, while declaring this treatment not yet ripe for adoption in practice, expects a good outcome from further clinical experimentation. Likewise Eggers considers the asserted affinity of copper for tuberculous tissue supported by 5 cases of external tuberculosis thus cured by himself; at the same time mentioning the successes attained by Strauss in lupous and verrucous ulcerations. Eggers observed marked improvement under the copper-regimen in his 15 patients suffering from pulmonary tuberculosis; only, he warns against too hasty inferences, inasmuch as very often consumptives are greatly improved or even cured under modern sanitary and hygienic methods. Bodmer has reported satisfactory results from the intravenous administration of copper, used in the form of the dimethyl-amidoacetate.

Of this same method of administering copper, already in 1913 (meeting of the Association of German Scientists and Physicians, at Vienna), Sörgo declared that the copper-therapy must be greeted as a notable step forward in the chemotherapeusis—that is, the medicinal treatment—of tuberculosis, both internal and external, and that the organic synthetic salt seems to be full of promise as the first, possibly, of a new, valuable line of salts of copper.

GAUCHER'S DISEASE

Our only excuse for referring to this disease, of which thus far only 18 cases have been reported since it was first described by Gaucher in 1882, is, that two new cases have recently been brought to light by Knox, Wahl and Schmeisser in *The Bulletin of the Johns Hopkins Hospital* (Jan., p. 1); and these gentlemen state that probably the disease is much more common than is generally believed to be the case.

The characteristic symptoms of Gaucher's disease seem to be about as follows: Insidious onset, in the majority of cases in young adults, but possibly in infants as

well as in middle life; a feeling of weight, accompanying enlargement of the abdomen; frequently hemorrhage, usually epistaxis or bleeding from the gums. The most constant physical sign was, enlargement of the abdomen, due primarily to increase in the bulk of the spleen and liver. The spleen is described as, in a number of instances, "filling the abdomen," and the liver was enlarged in 14 out of 16 cases reported in detail. The superficial lymph-glands were often moderately enlarged, while the blood presented a picture of secondary anemia, the most striking feature being reduction of the number of leukocytes.

The authors of the article cited, after a careful pathologic study of the two cases reported, have come to the conclusion that Gaucher's disease is not primarily a disease of the spleen or of any other organ or set of organs, but rather a generalized process due to a disturbance in fat metabolism, this manifesting itself by lipid metamorphosis, that is, by a more or less diffuse accumulation of lipid material in many cells, with the formation of characteristic large pale cells.

PREVENTION OF MALARIA

From the U. S. Public Health Service we learn that 4 percent of the inhabitants of certain sections of the South are afflicted with malaria, the percentage being higher among the colored people than among the whites. In two counties of the Yazoo Valley, 40 out of every 100 inhabitants presented evidences of the disease. We are told further:

"One of the important scientific discoveries made during the year was in regard to the continuance of the disease from season to season. Over 2000 anopheline mosquitoes in malarious districts were dissected, during the early spring months, without finding a single infected insect, and not until May 15, 1915, was the first parasite in the body of a mosquito discovered. The Public Health Service, therefore, concludes that mosquitoes in the latitude of the southern states ordinarily do not carry the infection through the winter. This discovery indicates that protection from malaria may be secured by treating human carriers with quinine previous to the middle of May, thus preventing any infection from chronic sufferers reaching mosquitoes and being transmitted by them to other persons.

"Although quinine remains the best means of treating malaria and is also of marked benefit in preventing infection, the eradica-

tion of the disease as a whole rests upon the destruction of the breeding-places of anopheline mosquitoes. The Public Health Service, therefore, is urging a definite campaign of draining standing water, the filling of low places, and the regrading and training of streams where malarial mosquitoes breed. The oiling of breeding-places and the stocking of streams with top-feeding minnows are further recommended. The Service also gives advice regarding screening and other preventive measures as a part of the educational campaigns conducted in sections of infected territory."

ACONITINE IN SCIATICA

Some years ago, writes a contributor to *The Medical World* for September, 1915 (p. 349), he had occasion to try crystalline aconitine in five obstinate cases of sciatica, and in four of these cases the results were very gratifying. In the fifth case, there was a complicating syphilitic periostitis of the upper third of the left femur, and here the aconitine treatment did not prove successful.

The dose of aconitine employed was 1-200 grain, which was injected, by means of a long needle, near the sciatic nerve, just below the gluteal fold. In one case, the results obtained were quite remarkable. The patient was a German, 65 years of age, a teacher in the public schools. He had been confined to bed for seven weeks, unable to move his left leg or turn over in bed unaided. After the second dose of aconitine, given thirty-six hours after the first injection, he could move without assistance, and after the third dose, given thirty-six hours after the second, he could sit up in bed and was free from pain. Five doses, 1-200 grain of aconitine each, effected a cure. On the seventh day of treatment, he walked about his room, with the aid of a cane, and on the fourteenth he was on the street.

THE TREATMENT OF RICKETS

In his very interesting paper upon "The Treatment of Rickets," appearing in *The New York Medical Journal* of April 1, 1916, Henry R. Harrower says that five things are needed to accomplish the desired results:

1. To replace the missing mineral element in the blood and bones, to wit, calcium. Calcium lactophosphate is the form chosen by Doctor Harrower.
2. To replace the missing vitamins, this being accomplished by suitable dietetic

regulation. Among foods which are valuable in these cases, Doctor Harrower mentions fresh milk (he objects to the pasteurized article), spinach, potatoes, carrots, turnips, peas, onions, and in some cases raw wheat or bran. Codliver oil, alone or in various forms or combinations, is also advised.

3. To antagonize the tendency to acidosis, which is invariably present in rachitic children. In nursing children, sodium citrate is recommended to be given in the milk, thus preventing the formation of large curds and favoring digestion. When the urinary acidity is high, sodium bicarbonate may be employed.

4. To enhance the mineral content of the blood, the salts necessary being present in fresh vegetables, which should be freely given.

5. To favor the restoration of conditions which cause or aggravate the disturbed mineral metabolism. This end is best accomplished, according to Harrower, by the use of small doses of adrenal, thyroid, thymus or pituitary. Doctor Harrower says that a mixture of adrenal, thyroid and thymus glands, while employed upon empirical lines, nevertheless gives good results.

TREATMENT OF TYPHOID BACILLI CARRIERS

In his excellent paper upon the treatment of germ carriers, published in the *Paris Medical* (March 4, 1916, p. 231), Carnot declares that he has been unable to cause the disappearance of the bacillus typhosus by the use of intestinal or biliary antiseptics. Calomel, urotropin and other substances have been used for this purpose, but without success. The method of treatment which has been found most successful is what he calls "intensive vaccination," using for this purpose what he calls a bilio-vaccine, consisting of cultures of the typhoid germ in bile, heated to 56° C., injected in doses varying from one drop to 1-2 Cc. The purpose in using this medium for the vaccine was that the bile injected would be eliminated by the biliary route and that the substances contained in the vaccine would also be eliminated in the same way, thereby exerting a local action.

This method of treatment has been employed in a number of cases by Carnot, and the majority have been successful. A number of cases are related in which the bacterin was injected at various intervals, usually a week or more between the injections. In the majority of instances, three vaccinations sufficed to cause the disappearance of the

germ from the stool. However, Carnot admits that while results on the whole have been good, there have been some failures, which it will be necessary to overcome by improvement in the details of treatment.

PHARMACOLOGY OF CYMARIN

Two contributions to our knowledge of cymarin—the active principle of apocynum cannabinum (Canadian hemp: cathartic, diuretic, diaphoretic), have been published in Europe last year (of which the Abstractor has knowledge), brief abstracts of which we find in the *Therapeutische Monatshefte* for July last (p. 402); and from these we quote.

According to A. F. Hecht (*Zeit. f. d. Ges. Exp. Med.*, 1915, p. 264), who has been conducting electrocardiographic experiments, the drug extract, as also does the pure cymarin, affects the mechanism of the heart's action in the same way as does strophanthin. Hence, Hecht characterizes cymarin as a remedy similar to strophanthin, although somewhat weaker in action; at the same time deserving praise for being less toxic and its freedom from pronounced cumulative properties. [Of course, the latter qualification applies to strophanthin as well.—ABSTR.]

Relatively large doses, he finds, cause an atrioventricular succession of heart-beat, prolongation of transitional interval, and simultaneous augmentation of the frequency of the sinus-beat, as well as increased tonus of the vagus.

The other pharmacologic study of this drug was conducted by an Italian—S. Taviani—at the Laboratory for Materia Medica at Florence (*Arch. d. Farm. Speriment.*, 1915, p. 445); these embracing both clinical and animal-experiments, and covering a rather wider field—with these results:

In the case of the frog heart, cymarin retards the rhythm of the organ; in increased dosage, it induces irregularity and peristalsis; still larger doses cause complete arrest, which occurs in systole (contrary to assertions by some writers in regard to other digitalis-like drugs), whether injected or applied upon the heart itself; medium doses increase the heart's strength.

The action upon the rabbit heart virtually is similar; however, it is characteristic here that this influence is exerted with certainty only when the substance is administered intravenously. In addition to the foregoing, there were observed deviations in the intensity of action; but this latter fact Taviani inclines to ascribe to the variable quality of

the commercial cymarins bought, rather than to essential differences in the specific experimental animals themselves.

The experiments did not indicate any influence upon the nerve and muscle irritability; however, arterial blood pressure is markedly increased, by moderate doses no less than by toxic ones. This action Taviani derives from the influence of the cymarin upon the cardiac muscle, but in large measure also from a direct vasoconstrictor action. The respiratory center is stimulated at first, then depressed and paralyzed.

After moderately large doses or the prolonged administration, diuretic action becomes manifest; but, on the other hand, the urine secretion again becomes diminished when very large doses are administered—owing to histologically demonstrable damage done to the kidneys.

Taviani summarizes the result of his observations as follows: (1) Cymarin is possessed of physiologic properties similar to those of digitalis; (2) its clinical utilization is somewhat circumscribed, by reason of its having to be administered intravenously; (3) it is not altogether harmless, owing to its possible deleterious effect upon the kidneys. Finally, cymarin deserves to be submitted to more general biological and clinical studies.

ALCOHOLISM AND THE MORTALITY IN TYPHOID FEVER

Studying the mortality from typhoid fever during a recent epidemic in France, Marcel Labbé (*Paris Méd.*, Jan. 22, p. 97) has been struck by the relatively high degree of mortality in cases of typhoid fever occurring in the French army among men who were users of alcoholic beverages. Doctor Labbé reports on the 304 patients cared for in the army hospital under his charge.

Out of these 304 patients, 136 belonged to the active army, 141 to the reserves, and 27 to the territorials. The mortality was as follows: in the men of the active army, 10.3 percent; of the reserves, 15.6 percent; of the territorials, 33.3 percent. The difference in the death rate between the older and the younger men in the various branches is explained in part by the relative proportions of those vaccinated in these branches. For instance, of the men of the active army, usually 57.2 percent were vaccinated; of the reserves, 26.9, and of the territorials, 29.6.

It will be seen, however, that these figures do not explain the great discrepancy in the mortality figures. Excluding the influence

of vaccination, it is shown that the percentage of mortality in typhoid fever is actually slightly less in the reserve than it is in the active army, consisting of young soldiers. Upon examining the cause of death in older patients, Labbé declares that these succumbed on account of organic weakness. Young soldiers, when they died, succumbed to the extreme violence of the infection during the active stage of the disease or as a result of some complication, such as peritonitis or intestinal hemorrhage. On the other hand, the older soldiers are more likely to die after prolonged illness, succumbing, after cure seemed to be in sight, from cardiac collapse, myocarditis, pulmonary congestion or renal or hepatic insufficiency.

This organic weakness may be ascribed to a number of causes; for instance, all forms of infection or intoxication from which the patient has suffered in the course of his existence and which leave behind some weakness that is revealed on the occasion of some later accident or illness. Among these weakening causes, Labbé places alcoholism in the first rank. The greater part of the older typhoid-patients who have succumbed were, on their own confession or according to the information furnished by their relatives, excessive drinkers, and these have presented an assemblage of symptoms characteristic of alcoholism, including intense delirium, in which a desire for the bottle held an important place, extreme agitation, marked trembling, hallucinations. Likewise, there were usually present hepatic enlargement, subicteric coloration of the skin or a state of acholia, revealing long standing changes in the liver. In several of these cases, one might have properly given the cause of death as alcoholism, rather than the typhoid fever itself.

Labbé believes that the inveterate abuse of alcohol is the principal cause of organic weakness occurring in men past 40 years. He does not mean to imply by the figures presented that only the territorials succumbed to alcoholism, since there were uniformly among the reserves and even among the active army individuals whose symptoms were aggravated and deaths brought about by alcoholic excess.

Labbé, finally, declares that a study of mortality from typhoid fever among persons of different ages brings once more into light this frightful vice of the French nation, one very important effect of which is, to reduce the resistance of the individual against disease and to aggravate the seriousness of

the prognosis in all severe diseases. This organic weakening alone is sufficient cause to justify severe prohibitive measures against the abuse of alcoholic beverages.

RADICAL TREATMENT OF RHEUMATOID ARTHRITIS

While there are certain predisposing causes of rheumatoid arthritis, such as heredity, injury, exposure, malnutrition, and worry, it is now generally believed that in the majority of instances this ailment may be traced to certain foci of infection elsewhere in the body. It is studied at some length by M. J. Rowlands in *The Lancet* of January 10 (p. 133). These foci of infection, in order of frequency, are outlined by Rowlands as follows:

The most important and commonest cause of the malady, he declares, is, a septic condition of the mouth, a condition not altogether unconnected with the development of modern dentistry. Rowlands believes that crowns and bridgework provide a source of infection, he having seen at least fifty cases of severe arthritis ascribable to this cause. Not only do these mechanical contrivances do injury to the tissues of the mouth, but they serve to conceal infected roots and abscess cavities.

As next in order, Doctor Rowlands mentions inflammations of the tonsils, which are usually of a chronic follicular type. Other causes, in the order given, are enumerated; suppurative processes in the postnasal space; diseases of the female generative organs, especially chronic infections of the fallopian tubes; cystitis arising from gonorrhea, prostatic enlargement or septic catheterization; rectal infections, including hemorrhoids, with ulceration, ischiorectal abscesses, fissures, and fistulas; appendicitis, usually of a chronic type, with occasional exacerbations—*bacillus coli* usually being found in the urine; antral infections—not a common cause, but an occasional one, the infection in these cases usually being mixed—*pneumococcus* and *streptococcus*.

Doctor Rowlands describes three types of rheumatoid arthritis, which he classes as the adolescent, middle-age, and the senile types. The first of these is of rapid onset, usually attacking the larger joints; the second, begins at about the age of 40; while the last occurs in patients past 50, this having a predilection for the smaller joints. The second type is the more amenable to treatment.

The cardinal point in the treatment is the disinfection of the original focus, if this is

possible, in association with bacterin-therapy. The latter has proven of very great service in the treatment of these cases; however, the dosage of the bacterin employed is a matter of importance and must be regulated according to the individual features of the case. In old people, one has to be careful to avoid unpleasant reactions from overdosage.

In the average acute case, Doctor Rowlands begins treatment with 5 millions of the organism, if this is a *streptococcus*, *pneumococcus* or a *diphtheroid bacillus*; but, of the *colon-bacillus*, he begins with 10 millions in an acute case, and 50 millions in a chronic case. If the reaction following the first dose is rather severe, the succeeding dose should not be increased; in which event there should be no great reaction. Following this, the dose may now be increased until one finally reaches the following numbers: *Colon-bacillus* and *paratyphoid bacillus*, each, 200 million; *pneumococcus*, *streptococcus*, *pyocyaneus*, and *diphtheroid bacilli*, 50 millions.

There should be an interval of from seven to ten days between the injections, and, when there is a very marked improvement, this should be increased to fourteen to twenty-one days. Treatment should be continued for at least a year. If possible, the injections should be given in the evening.

The usually indicated medicinal treatment should be employed in association with the vaccine-therapy.

ERYSIPELAS

Sexton (see *Brit. Med. Jour.*, Feb. 5, 1916) cured a case of erysipelas by painting the surface every 12 hours with *ichthyol* and *glycerin*, covered with *oilsilk*, and by the administration of 1-8 grain of *mercury bichloride* every four hours. The *protoiodide* should answer as well; and don't forget your vial of *pilocarpine*.

INTESTINAL TOXEMIA

"It is remarkable how completely incapacitated an individual may be who has ineffectually emptied the rectum and possibly the sigmoid flexure, whereas, higher up in the large bowel or in the coils of the small intestine some particle of food is undergoing decomposition, and meanwhile is filling, not only the intestine, but also the blood and lymph circulations with poisonous gases." Good for Willson! That's the doctrine we have been preaching all these years.

Miscellaneous Articles

Radiography, and the Twofold Action of Drugs. Tobacco

WHEN radium was discovered in 1899, it was defined in one of the standard dictionaries as a rare metal obtained from pitchblende, and was said to afford "a cheap, simple, and most effective means of radiography." This was doubtless true then; it is different now in so far as concerns its cost. But the object of this paper is, to show that both radium and the Roentgen-ray confirm the truth of the fact first clearly established by me in a paper published in the April and May numbers of the London *Practitioner*, in 1888, showing that all our active drugs have a double, or twofold, action. They have one effect in their physiological or toxic dose, and a contrary effect in their small, alterative or restorative dose.

The teachers, writers, and authorities generally were chary about admitting this thirty years ago, doubtless fearing it would lend color to the *similia* theory. Fortunately we have since advanced beyond this foolish quibbling over words. Many of the county medical societies of late have admitted Homeopaths to membership, and the American Medical Association some years ago repealed the rule prohibiting consultations with them. We now make our practice agree with what has always been our doctrine, that regular medicine embraces all useful medicines and curative methods. It permits us to administer or prescribe any drug or mechanical measure proved of value, from a nearly infinitesimal dilution of tuberculin or of the vaccines, when they suit, to stimulant hypodermics of strychnine for a failing heart or big doses of quinine for pernicious malarial fever.

In this, we are entirely consistent, since the doctrine of *similia similibus curantur* did not originate with Hahnemann, but had been promulgated long before and never proved anything, though it is one approximate method of selecting the right remedy, which is always opposite in its action to the tendency

of the pathologic action at the moment; therefore, might correctly be called *Antipraxy*, as one apostate from Homeopathy called his special "pathy."

The volume of the "Practical Medicine Series" for 1915 (Chicago), which treats of materia medica, preventive medicine and climatology, contains evidences in a large number of quotations from medical writers in various parts of Europe that those mysterious agents have contrary actions according to the dose, like the well-known old remedies.

For example, Esdra reports, in *Policlinico*, that he has treated 53 cases of cancer by the forms of rays under consideration. In 31 cases of epithelioma that were treated with radium, there was benefit in all but 4, and in 5 of the 11 cases that had the x-ray; "but," he says, "the benefit was transient, recurrence at the spot or at a distance followed, and the recurrences proved refractory to the rays. . . . Epithelioma of the lip, mouth, and palate seemed to improve rapidly under radium, but recurrence soon followed. . . . it seemed as if the radium had actually whipped it up into a fulminating course, speedily fatal." However, Esdra added, that "in 5 cases of sarcoma, a permanent cure seems to have resulted under the radium and in 1 of the 7 cases of Roentgen treatment." Again: "Epitheliomas not actively malignant yielded to radium or Roentgen-rays in a gratifying manner." In numerous local affections, the same writer reported cures. These included 12 trachoma-cases, 6 tuberculous ulcerations, and 7 cases of keloid acne. Sometimes one kind of rays succeeded after the other kind had failed.

In cancers of the breast, Kotzenburg reported, in a German journal, 53 cases, with recurrences in 54 percent of them. Futh is quoted as having reported, in another German journal, 56 cases of uterine cancer treated with radium and the Roentgen-rays, and in

53 percent of 45 women who had the radium-treatment no general disturbance resulted soon after, but all the others had more or less trouble, such as depression, loss of weight, and so on. There was much complaint of sequelæ in the bladder and rectum, and in one stricture of the rectum followed.

The reports seem to be about equally favorable and unfavorable as to the results. Rovsing, another foreign observer, was so pleased by the results in his earlier cases that he was induced to give radium especially a very extensive trial, but his tragic experiences afterward forced him to the conclusion that indolent and benign growths were rapidly fanned by the treatment into malignancy and that it is never curative finally. He has been unable to find in the literature any authentic cure of cancer under radium.

The final outcome is what counts, and a long enough time has not elapsed, since most of the recent cures were reported, to ensure that they will prove to be permanent. The large number of favorable cases reported in the volume just cited should be sufficient to raise hopes that eventually the methods may be so mastered that the proper restorative dose and the frequency of repetition may be such as to be both safe and helpful in the majority of cases.

In a great number of benign affections and nonmalignant tumors, both the kinds of rays will doubtless prove at least palliative. In the malignant tumors, there may often be marked improvement for a time; but, with a few exceptions, the final effect will be death when either agent is long pushed. The fatality among the specialists in the use of them was wofully large, until the methods of protecting themselves from the rays were perfected.

While with these hitherto obscure and little understood remedies the exact dosage which tends to the cure and the opposite one which harms the patient more than the disease has not been as clearly worked out as with some of the more familiar drugs, the antagonism between the large and the small dose is manifest, a much more positive and decided antagonism has been demonstrated by observers in the same volume of the "Practical Medicine Series" with regard to nicotine, as well as between the opposite actions of the infusion of tobacco in their different ranges of dose. E. Tedeschi is quoted as having reported, in the *Reforma Medica*, experiments which proved that nicotine causes "a marked and prolonged intestinal spasm" in large doses, while the well-known effect of a few

cigars daily is, to favor the regularity of bowel movements. With the infusion of tobacco, "the intestinal spasm is more intense and prolonged from large doses; while with small doses there is stimulation to uniform rhythmic contractions." This may confirm some smokers in their habits, provided they have already reached their growth; but the great harm which tobacco does to boys has been shown conclusively in college records, and few men escape the cumulative harmful effects from a prolonged use of it.

BOARDMAN REED.

Alhambra, Cal.

HARROWER IN LOS ANGELES

We learn that our friend Dr. H. R. Harrower has recently won a \$25.00 prize for a paper which appeared in the April 1 issue of *The New York Medical Journal*. Doctor Harrower has established himself as a practitioner in Los Angeles, California, his address being 1107 South 7th Street, Glendale. The Doctor will be remembered for his book on "Practical Hormone Therapy," also for the test instruments, the acidimeter, indicanmeter and albuminometer, which he has designed and with which every reader of this journal is probably familiar.

A WHOOPING-COUGH SUGGESTION

Dr. F. A. Remley, of Alvin, Texas, writes us that infusion of fresh chestnut-leaves—made by putting one ounce of the leaves in a pint of water, then boiling and straining, and giving this entire quantity of the tea in one day—will control the vomiting and whooping of pertussis within four or five days. The daily quantity is to be made fresh every morning. Fresh leaves must be used; old ones will not answer. The Doctor is not satisfied with the tincture or fluid extract.

EMETINE IN TYPHOID FEVER

I was pleased to notice in *CLINICAL MEDICINE*, May, 1915, issue, a digest of my article published in *The Medical Record* for March 20, 1915, relative to the use of emetine in typhoid fever. I also have been reading with interest the reports sent in by other physicians, and was more than interested in those printed in your December issue, especially the article by Doctor McCoy. I believe every statement made by Doctor McCoy. I believe it, because of my experience since I wrote the article for the *Record*.

There has been an epidemic of typhoid fever in my residence town during the past four months, and this has furnished me abundant material for demonstration. I had been treating my patients with emetine, with the same beautiful uniform results, when simultaneously I had two who continued to have elevated temperatures, and whose cases were as near the typical old-fashioned ones as I ever saw. I searched my brain to find the cause, but was about to despair of finding it, when one night I was called to see a 3-year-old child. The child, I found, had a loaded stomach and bowels, and, so, desired to produce vomiting. I gave 1-4 grain of emetine hydrochloride by mouth, but no vomiting had occurred after thirty minutes. So, I gave another 1-4 grain. Thirty minutes again passed, and no vomiting. I then gave 1-2 grain, but still no action.

It now dawned on my slow brain that the reason why my two typhoid-patients were not improving was, because my late supply of emetine was inert. To make certain, I swallowed 1-2 grain of it after a light meal, and it did not nauseate me. Had it not been inert, it surely would have done the work, for I have never been able to take ipecac in the smallest dose without vomiting, ever since I climbed on a chair and got the bottle of syrup of ipecac from my father's table thirty-five years ago and drank the stuff. I also put this emetine to a bacteriological test. A culture containing emetine in the proportion of 1 : 25,000 will not support the growth of a typhoid-culture. But this particular emetine would support the growth of typhoid-bacilli in a strength of 1 : 1000.

I changed products, and thereafter got the same uniform results in the two cases in question that I had been getting, but in one it was the eighth and in the other the ninth day before the temperature became normal. I lost nearly a week because of a poor article.

It is reported officially that strophanthus varies 3000 percent, as put out by different firms. I believe that the quality of emetine has an extremely wide variation, also.

Later, I had another case which did not yield readily. Upon making a diligent search for the cause, it was found that the emetine was being very slowly taken up by the patient's circulation. The patient had a great quantity of adipose tissue, and the bullæ made by the injection had not entirely disappeared at the time of the next injection. Upon injecting beneath the adipose layer, the emetine was taken up rapidly and the temperature yielded beautifully. I think that

previous to the deep injection the emetine was eliminated about as rapidly as it was absorbed. I suspect that there is a possibility that Doctor McCoy's failure might be traced to some obstructing factor, also.

The cases of typhoid fever I had during the epidemic, other than the three mentioned, were aborted in from two to five days. In addition to the cases I have had, there have been reported to me by 53 different physicians altogether 163 typhoid cases. Of these, all were reported to have been aborted, except 18. In 16 of these 18, emetine was not used until after the second week, and then with doses of 1-4 grain twice a day.

There may be some cases of typhoid fever which can not be aborted by the use of emetine, but I have never seen any which failed, without being able to find some reason for it, such as poor absorption or a poor emetine, but, as a matter of course, other factors may enter in some instances.

My experience has been that the earlier the emetine is given, the more rapid the results. Early in an attack, the bacilli are principally in the circulation, where the emetine easily reaches them. Later, the bacilli are located in part in the tissues of the lymph-glands of the intestines, and then are more difficult to reach. My theory is that the emetine forms a medium in which typhoid-bacilli cannot grow.

Always stress is laid on the need of a proper diagnosis. I make an early Russo test. This test is not positive after the first few days. If the case is too far advanced for Russo's test, and not far enough advanced for the Widal test, then I use Ehrlich's diazo test. Later, I always make the Widal test. But I consider Russo's test and Ehrlich's diazo test as reliable as the Widal, and they can be gotten earlier—which is of great value. Still, it is necessary always to bear in mind that Russo's test is also positive in measles, smallpox, and advanced tuberculosis, which conditions are easily recognized. Also, Ehrlich's diazo reaction is positive if the patient has been taking phenolphthalein.

Every case of typhoid fever is a case unto itself, just as every case of diphtheria is a case unto itself. I give emetine in every case of typhoid fever I treat. Ordinarily I give to adults 1-2 grain twice a day; but it is also very necessary that the bowels be kept well open, the feeding carefully regulated, and proper hygienic conditions observed.

I believe in emetine in typhoid fever just as I do in antitoxin in diphtheria; and I should not think of leaving it out of typhoid-

treatment, any more than I should consider abandoning the antitoxin in a case of diphtheria; for I get the results with it. I am convinced that when once the profession learn how to use it it will be known to be a specific for typhoid fever.

If anyone cares to ask any questions I shall be pleased to answer them, provided I have made observations or tests that give me knowledge to answer them.

W. L. FRAZIER.

Mountain Home, Ida.

PUT THIS BEFORE YOUR CLIENTELE

A regular physician, sometimes called a "medical doctor," is not simply a doctor who uses medicine alone to cure disease. This term of regular physician is applied to one who follows a system of practice that has been proven by centuries of usage and superiority of service over any of the other so-called systems of treating the sick.

There are other systems of great value, namely, the Homeopathic and the Eclectic; but, the regular physician is that one who is unhampered by any narrow creed and is free to adopt in his treatments the best that has developed for the cure of sickness, whether by science or outside of science.

Regular doctors do not limit their treatment of the sick to the single method of dosing out drugs, as many drugless doctors would have you believe. Many people think it is wrong for doctors to give drugs because some drugless healer has told them that they are poisonous and harmful. Wonderful advice, when you stop to consider the fact that the drugless healer knows nothing about drugs or their effects, while the law does not allow him to use them even if he believed in them.

Why are drugs such a terrible thing as the drugless healers would have you believe? All drugs belong to the animal, vegetable or mineral kingdom. God had a hand in the formation of these things and permits them to grow. He endowed man with a mind to find out about things put here for his welfare. Dogs frequently are seen to eat grass when sick. Cattle eat certain herbs for ailing conditions. Cats like catnip, because it keeps off cat-diseases. Nature endowed these dumb animals with this faculty to use these things put here for their benefit—why should not man make use of them? He has. And the regular medical physician has been doing good for humanity for centuries, and today, notwithstanding the numerous so-called drug-

less healers, they outnumber all other systems of practice.

Now, the use of drugs is only one small part of our system of curing disease. We use water in many ways, regulated diet, graduated exercise, sunlight, fresh air, heat in many forms, massage, electricity, radium, vaccines, serums, and so on. All of these, and more, we regular physicians make use of to cure sickness and prevent disease.

What would you think of a farmer who wanted to raise a crop, yet, who would do only one thing, namely, plow the ground? Not much of a crop would he raise if he did not also harrow, disc, seed, irrigate, and so on. Yet, many people will believe those drugless healers, who claim every disease is due to one thing, and one method of treatment is curative in all sickness. Many claim that all disease is due to a defective spine and claim to cure all disease by manipulating the spine. It is about as likely as the farmer raising a crop by doing nothing but plowing. Why do not all people, in selecting their doctor, use common sense, as they would in raising a crop?

We regular physicians do not claim that the drugless healers do not cure anything. But, you will notice that when they do cure a patient it is advertised extensively; and it seems that the public is unduly impressed by the fact. Possibly it is because the public thinks it wonderful for the drugless healers to cure anyone even occasionally; yet, they expect the many cures we, the regular physicians, make and, hence, are not so enthused over them.

In the past two months, I have had 23 former patients of drugless healers, who had received no permanent benefit; each one of whom after a short course of scientific treatment was cured. One woman had been having her spine manipulated every other day for a year, at great expense, but no results. A short course of treatment under my care cured her entirely. My fee was \$8.00; former work by a drugless healer amounted to \$187.00, after he knocked off some of his full bill.

I find many patients who have simple troubles, but had been told by drugless healers that they had dislocated hips or backs or other serious troubles. The public should know that the hip is the strongest joint in the body and very seldom dislocated, except by the most severe accident. Yet, many people believe what drugless healers tell them when much of it is told to encourage the patient to take a number of treatments at so much by the dozen.

In Montana, no drugless healer dares to give chloroform or prescribe drugs in any form, either externally or internally, for that would subject them to a fine; and if one of your family loses his life under such procedure, the healer is liable for heavy damages for malpractice and a probable jail-sentence.

These are facts I wish you to consider and weigh well, for it is for your benefit. We, the regular physicians, are unhampered by law, by lack of training, prejudice, or narrow ideas; hence, we use the best of every method under the sun for the alleviation of sickness. We do all the drugless healers can do, and a hundred times more. Because you failed to get results with one regular physician, do not conclude that all are on the same footing; for, the very next man may be more thorough and cure you quickly.

F. E. McCANN.

Big Timber, Mont.

FORMALIN FOR SORE THROATS

I am surprised that none of your correspondents even mention formalin for sore throats. I know of no gargle or spray better. A 1-2-percent solution with or without potassium chlorate—and perhaps with a few drops of liquor cocci (cochineal) to make it look pretty—takes a lot of beating.

J. M. G. EWING.

St. Vincent, B. W. I.

SUGGESTION FOR AN OBSTETRIC FORCEPS

I am not informed as to what type of midwifery-forceps is in general use in the United States. But in the United Kingdom

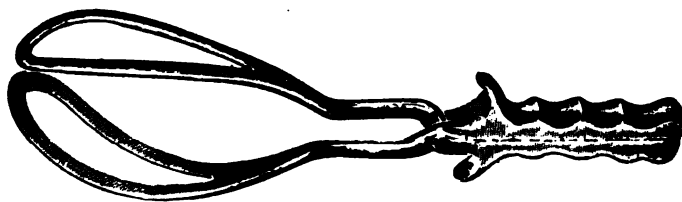


Fig. 2. Simpson forceps.

Simpson's long forceps (Fig. 2). I presume, however, that in America probably some type of an axis-traction forceps is the kind most commonly employed by general practitioners. So far as I know, axis-traction forceps similar to the one illustrated in Figure 1 are "the last word" in midwifery-forceps.

The main objection to the Simpson forceps is, I believe, that it is an unsuitable instrument for pulling in the axis of the pelvis; for, because of this, any force applied is partially lost, and there is a great tendency to produce bruising of the soft parts and tears of the perineum. The axis-traction forceps was designed to pull in the axis of the pelvis—the curve of Carus, if my memory serves me right.

It seems strange to me that no one, bearing in mind the curve of Carus, has yet tried a curved pair of forceps. Still, this would strike one as being the proper type of instrument to employ.

If one takes two surgical needles, one half curved and one a half-circle, and puts these through a piece of thick cloth, then the half-curved needle will represent Simpson's long forceps, while the half-circle needle will represent will represent a pair of curved forceps. Pull the half-curved needle out, and you will find that the pressure on the part of the cloth, which corresponds to the perineum, is very severe, while the half-circle needle pulls out exceedingly easily, without undue pressure at any point.

Figure 3 depicts an obstetric forceps similar to Simpson's long forceps, only with shanks and handles curved in one continuous curve. I have drawn the handles shorter than Simpson's and added a fixation-screw at the end. Such a forceps would, I believe, act similarly to the half-circle needle.

For application, the patient would lie in the left lateral position and the blades would be applied in the ordinary way.

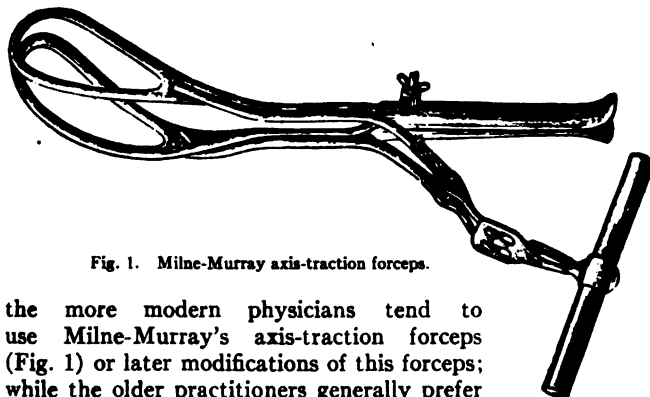


Fig. 1. Milne-Murray axis-traction forceps.

the more modern physicians tend to use Milne-Murray's axis-traction forceps (Fig. 1) or later modifications of this forceps; while the older practitioners generally prefer

The physician would then change to the other side of the bed and grasp the handles and pull; when the direction of the pull would bring the handles toward the patient's abdomen. Hence, the short handles. Indeed, it is quite possible that the patient herself might be induced to pull on the instrument, instead of

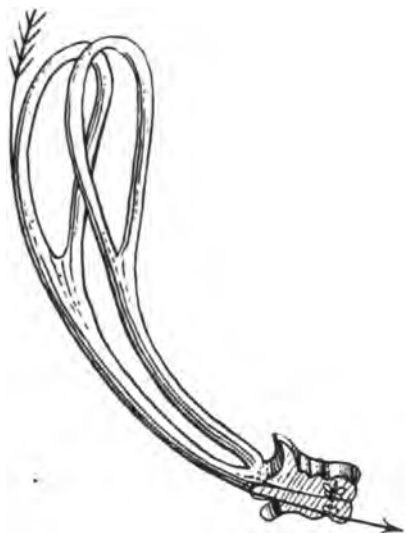


Fig. 3. Forceps suggested by Doctor Ewing.

pulling on a towel, during the pains. The fixation-screw would prevent slipping.

It seems to me that there would be danger neither to the perineum nor the urethra. Of course, the forceps would have to be reapplied as rotation took place, but this needs to be done with any kind.

If I were not up country, in a tropical island, thousands of miles away from instrument-makers, I should have this instrument made and try it. I believe it would be very nearly ideal.

What is your opinion? Do you think it is worth trying? Take a look at a section of the pelvis.

If the instrument is made with the proper curve and properly applied, it cannot injure any soft part.

T. M. G. EWING.

St. Vincent, British West Indies.

[We referred Doctor Ewing's article to Professor William Rittenhouse, of Bennett Medical College, who made the following comment:

"I have read Doctor Ewing's article carefully and with much interest. The idea evolved is one of great importance, and one which I have unceasingly impressed upon

my students, namely, that at every point in the curve of Carus the direction of traction must correspond to the curvature at that point. Now, the most decidedly curved portion of the curve of Carus is its lower end, so that on a side view it is almost hook-shaped. Hence the necessity of that sweeping movement of the forceps handles at the moment of exit which brings them over the patient's abdomen.

"The hardest part of the problem, however, is in the upper half of the curve of Carus; in other words, when forceps are applied at the superior strait, how best to secure the traction needed to bring the head half way down. In the lower part of the pelvis almost any forceps will answer if it be wisely used.

"The doctor's illustration of the two needles is apropos. It is true that if the half-curved needle be withdrawn in a straight line the pressure on the part of the cloth corresponding to the perineum will be severe, but most of that pressure vanishes if the eye end of the needle be raised, and the withdrawal be made with a sweeping motion similar to that which we make with the forceps handles at the moment of exit.

"In my opinion most forceps are made too straight, and I should like to try such a curved instrument as Doctor Ewing suggests. The only doubt in my mind is whether it would be effective in the first part of a high operation. When the head is at the superior strait the direction of traction must be downward and backward toward the coccyx, and I do not feel sure that this could be made effectively with the proposed instrument except by leverage, using the pubic arch as a fulcrum, which, of course, could not be done without injury.

"I have a Tarnier axis-traction forceps similar to the Milne-Murray, but I seldom use it because it is not at hand when wanted. I do not want to carry two pairs of forceps all the time, and I do not like the Tarnier for ordinary work, it being too straight. So on the rare occasions when I have to apply forceps at the superior strait I improvise axis-traction in the following way: I apply the Hodge forceps, which I always carry, in the usual way. An assistant pulls moderately on the handles in the direction of the patient's feet, while I make traction on the fillet downward and backward as nearly as possible on line with the axis of the superior strait. It might be thought that the perineum would be in the way, and liable to suffer injury; but by crowding it upward as well as backward it gives little trouble. As soon as the

head is half-way down, the fillet is removed and the delivery completed with the forceps alone."—ED.]

TO THE MAN IN "HARD LUCK"

The correspondence from "Q" of "Texas" in a recent CLINIC will appeal to many of your readers as a real experience, not by him alone, but as that of many other doctors. He says that in three years' practice in three states he has failed to collect more than ten cents on the dollar. Now, I'd like to comment a little on his condition. There must be reasons for his experience. The fault may be his.

1. He may "mix" either too much or too little.
2. He may be the right man, but be located in a poor place.
3. He may be the wrong man in a good place.
4. He may have been surrounded by unethical and unscrupulous physicians.
5. He may have been where fees are too low.
6. He may have practiced where both the people and the soil were poor.

Many things enter into a physician's success or failure. Sometimes it is his own fault, but just as often it is the fault of the kind of people he has to deal with or it may be the kind of physicians he has to compete with. Physicians who contrive all kinds of schemes to get business and then render service for about one-half of what their services are worth make life miserable for the honest physician with a family to support, and also does himself an injustice.

I have always been able to collect about 90 percent of my accounts. Too many physicians wait too long after service is completed to collect the amount due them.

Better send your statement in about ten days or two weeks, to keep the transaction fresh on their minds. If you plead poverty and urgent need, often you can gain their sympathy, and with it their money and future business. It is best to appear broke, even if you have \$5000 in the bank or in your pocket.

If you pass them up as deadbeats and fail to collect your account, you lose in four ways:

1. The money they owe you;
2. Their future business;
3. Their influence;
4. The confidence of those whom you owe, because you have failed to pay them with the money you should have collected, but didn't.

The brother from Texas who is now teaching school sure has my sympathy, as I have done that same thing and have been thinking of doing so again, after a number of years of general practice.

I have all my pedagogical data collected and ready to hand in for a license under the new certificating system.

Business either will have to pick up or I'll have to get into some other business.

The brother from Texas may not have stayed long enough in one place. I note that he states he has tried three states in three years. There are others, however, who have moved often and more in that time and lived in one state.

There have been turned out entirely too many M. D.'s in the past twenty years. In addition to this, all kinds of cults and quacks have sprung up, thus making it harder for the honest qualified physician to get a start, as many people—intelligent ones, too—apparently enjoy being faked. The words of P. T. Barnum about the American people loving to be humbugged is as true today as it ever was. The best place for a physician to locate is in a German or French Catholic farming community. I am neither one of these, but have done business with them.

"KIRK."

SORE THROAT AND CROUP. EMETINE IN HEMORRHAGE

Certainly we shall all get help from these contributions on sore throat and other winter diseases; so, to help along, I send my mite. For tonsillitis, simple or follicular, if abscess has not as yet formed, give the tonsillitis tablet (containing aconitine, bryonin, atropine, and mercuric iodide) until you see its effect on temperature; saturate the patient with calcium sulphide; give him any good antiseptic gargle. Quick effect will be secured. If an abscess forms, despite this treatment (which it will not if you get the case soon enough), incise freely, then follow with hot peroxide washes.

For croup (of which we have little out here), give syrup of ipecac, to produce vomiting, if the breath is about stopped. If the cough is croupy, calx iodata, gr. 1, in hot water every hour or two, will change this and prevent true croup. In my families, I give this as a prophylactic when a child is hoarse at bedtime. Most mothers are very willing to keep these calx-iodata tablets on hand.

I must also report some emetine experi-

ences. A child of 6 years had severe epistaxis, which could not be controlled by local measures. Everything imaginable was tried. At the same time the child was passing tarry, bad-smelling stools—clearly denoting intestinal bleeding, high up. (No blood from the nose was swallowed, I feel sure.) One-half grain emetine hydrochloride was given hypodermically, and this stopped the bleeding for twenty-four hours. Upon its recurrence, a second dose was given, which caused complete recovery, lasting several months. When the nosebleed did occur again, it was easily stopped by local measures, but upon exertion would start again, as also the tarry stools in very small amounts. This time a dose of emetine produced complete recovery. There has been no relapse within a month.

Another case is that of a boy of 13 years, in whom hemophilia was diagnosed, there being hemorrhage from nose and gums. Everything was tried, even packing the anterior and posterior nasal passages, but without benefit. At last emetine was given hypodermically every twenty-four hours for about ten days. There was some improvement, but the hemorrhage recurred. Then, after the emetine failed, coagulose was given, but still there was no benefit. Although a microscopical examination of the patient's and the father's blood showed some antagonism, a subcutaneous injection of the father's blood (10 Cc. in amount) stopped the bleeding. Bleeding did not recur in thirty days.

MONTANA.

ASSOCIATION OF THE U. S. INDIAN MEDICAL SERVICE

A number of physicians of the Indian Medical Service are perfecting an organization, with the sole object of placing this department of the government upon a higher plane. Several years ago, the United States Public Health Service recommended many changes that would increase the *esprit de corps* and insure a supply of permanent physicians for the Indian Service; however, very little has been done.

The Indian Medical Service requires more from its physicians, while paying less, than does any of the other government services. It is because of this inadequate compensation, together with the absence of reasonable expectation of promotion and of coordinate organization, that these physicians are planning an active campaign for reorganization.

The Association will ask for a chief medical

officer whose authority in matters pertaining to his office is to be supreme; organization to be based upon that of the higher government services; and increase in rank and of salaries. Former and present active officers of the Service are requested to write to the "Temporary Secretary, Association of the Indian Medical Service," Shiprock, New Mexico, or, to the Treasurer of the Association at Crozier, New Mexico.

TREATMENT OF RHEUMATIC JOINTS AND MUSCLE PAINS

Replying to your inquiry (April CLINICAL MEDICINE, page 301) for suggestions regarding the successful treatment of rheumatic joints and obscure muscle pains would offer the following.

For joints: Immobilization by open case or splints well padded; methyl-salicylate ointment thickly applied on wool covered with oiled muslin; saturation with sodium salicylate as quickly as possible, large doses given frequently with hot water until stomach shows signs of rebellion, then change to mixture of *cimicifuga* and *gelsemium*, generous doses (*veratrum* may be added with profit occasionally); galvanism, using positive pole 25 to 30 ma. with electrode wet with sodium salicylate 5-percent solution, followed by high frequency, using vacuum electrode; fly-blisters an inch wide and 4 to 6 inches long and an inch apart; lately have used quinine and urea hydrochloride, full ampule injected into joint after aspirating what fluid will come out readily. This treatment will give positive relief for two or three days. Heat should be applied continuously; I use an electric pad and like it best.

For muscles: Practically the same treatment except that no immobilization is employed except for lumbago, when I use adhesive plaster, tightly applied over the whole back, from coccyx to scapulae, well over iliac prominences (crosswise) and up to scapulae; either oil of *gaultheria* or methyl salicylate ointment well rubbed in for 15 to 20 minutes twice or thrice daily; follow with hot iron (electric) and "bake" it in.

Vibratory massage has a definite field of action here. I apply it in my office after thorough rubbing and massage with oil of wintergreen. Positive galvanism is employed, as described, followed by high-frequency sparking to toleration and internal treatment as outlined.

Joint cases (not gonorrheal) are usually anemic and need iron, manganese and arsenic

in some form and do not improve rapidly without it. Diet largely of milk, much water internally, hot baths to keep skin active and daily internal clean out.

ALEXANDER BARCLAY.

Cloquet, Minn.

[To Doctor Barclay's exceedingly thorough treatment I would like to add two expedients, often of value. First, bacterins. If a source of infection can be found, as an enlarged and inflamed prostate, a middle-ear discharge, pyorrhea, or chronic tonsillitis, try to cure the original trouble, and if possible get cultures for an autogenous bacterin. In four cases out of five streptococci cause the trouble and a stock bacterin will give relief. Emetine for pyorrhea.

Second, make a careful examination of the urine. This will throw light on many obscure "rheumatic" pains. Nearly always there is excessive acidity, requiring alkaline treatment. Indicanuria shows the necessity for intestinal antiseptics. Do not forget to make a bacteriologic examination of the urine. It may give you the key to the trouble.—ED.]

TAPEWORM IN THE HORSE

When you responded to the "S. O. S." call of the poor old horse, to rid him of the unwelcome tapeworm, as narrated on page 173 of the February number of *CLINICAL MEDICINE*, did you really mean it was necessary to consider its size and condition when the dose was determined? I have for these many years believed, and acted upon the conviction, that it took just as much to kill a four-or five-inch stomach worm in a child as a grown person, and the same rule ought to prevail in a horse, regardless of weight.

Fifteen or sixteen grains of the first decennial trituration of santonin, given in four doses a few hours apart, with water, invariably finished them. Little children too small for such a dose are seldom infested with these guests, hence are not considered in the above statement.

HENRY M. WARREN.

Jonesville, Mich.

[We referred Doctor Warren's letter to our veterinary friend and colleague Dr. N. S. Mayo, who recommended the areca-nut treatment in the February number. Doctor Mayo comments as follows:

"Pulverized areca nut is an active purgative, and when administered to animals as a

vermicide, gives best results when it is given in doses that induce purging. In veterinary practice, when a medicine of this character is administered, the welfare of the patient is always given first consideration; for this reason varying dosage was indicated.

"Regarding santonin as a vermicide in human practice, I do not feel competent to express an opinion. In veterinary medicine santonin is used extensively for the destruction of roundworms; for tapeworms, areca nut or malefern extract is generally preferred."—ED.]

EMETINE IN WHOOPING-COUGH

A recent article in the public press says that some doctor in Wisconsin, or somewhere in that country, has made the discovery that emetine is very valuable in whooping-cough. I want to say that I have used this drug in this disease with marked success for a number of years, but did not go into print as a discoverer, taking it for granted that others ought to know of this as well as I.

Calcium sulphide, with enough lobeline to control the spasmodic feature, along with the emetine, has never failed in my hands.

GEORGE A. MATHEWS.

Wray, Colo.

[The item to which the doctor refers was printed in one of our Chicago papers. The doctors whose experience was reported live in Milwaukee. We wrote to one of these gentlemen, Doctor Strauss, and he corroborated the press statement, declaring that the emetine was used hypodermatically in large doses—1-2 grain, as I recall it. As this quantity seemed very large for children, we have hesitated to advise the use of the drug in this manner and dosage. However, in dosage fitted to the child's age we have great faith in it, especially if employed in association with the remedies recommended by Doctor Matthews.—ED.]

HELP IN TREATING PELLAGRA

Dr. J. B. Robertson, of Gunsight, Texas, writes us that he will be glad to send any physician interested in the matter full details regarding the method he is using in treating pellagra, upon receipt of stamps for postage.

MIGHTY NICE OF YOU, DOCTOR

Enclosed you will find my check for two "bucks." You may keep the journal coming

to my address until I am dead, or you are otherwise ordered to stop it. When I am so deeply indebted to you that you feel that you cannot allow me to run any longer, then urge me as you have this time and I shall remit again. I am taking entirely too many journals and I shall cut out some of them; but I do not feel like cutting out THE AMERICAN JOURNAL OF CLINICAL MEDICINE.

C. V. STEPHENSON.

Centraville, Tenn.

THE AMERICAN JOURNAL OF ELECTROTHERAPEUTICS AND RADIOLOGY

Dr. William Benham Snow, who for many years has been editor and publisher of *The Journal of Advanced Therapeutics*, writes us that the name of this publication has been changed to *The American Journal of Electrotherapeutics and Radiology*. It is said to be the only journal published in this country which is devoted to physical therapeutics. Much attention will be devoted to x-ray and other electrotherapeutic measures, physical therapy as a whole not being neglected. Any physician who is interested in this form of therapy should certainly subscribe. It is published by the Scientific Authors Publishing Company, 2020 Broadway, New York City.

CURRENT COMMENT BY A COUNTRY DOCTOR

The High Price of Quinine.—With the price of quinine accompanying that of many other drugs to a most burdensome point, and with the prospect of its reaching very nearly to the prohibitive figure, economy of administration of the drug, as well as the employment of a serviceable substitute, is forced on the attention of the physician. Probably many who have adhered to the massive dose of quinine, usually in the form of the sulphate, will give attention to the lessening of dosage and the more careful selection of the combination with the quinine molecule. Ammunition being short, it will be used with the highest obtainable degree of efficiency.

If the "clean-up" idea is followed up, cholagog and intestinal-antiseptic treatment being carried out from the start, together with almost prohibitive initial dietetic regulation, the forces of nature can be so conserved and concentrated that with a little aid the invading forces of the protozoa can be overcome.

Briefly, the treatment of the various forms

of malaria resolves itself into giving the system as much rest as possible from its normal physiological functions, including maintenance of balance between benign and prejudicial alvine flora, and in aiding destruction of the causative organism in the blood current; always looking to the symptomatic manifestations while doing so.

If the patient be seen during the chill or other algid state, we shorten this period by the use of glonoin, amyl nitrite, or some other effective remedy, then look to elimination by kidney, skin and rectum, thereby aiding in throwing off formed and forming toxic products.

With all the secretions established and hematuria controlled (if present), look to the antiperiodic. If quinine is to be used, just forget, for the moment, its antimalarial power while considering the general indications. If there is nervous irritability, for instance, the valerate or the ferrocyanide will likely be thought of, or possibly the bromine combination may be called for. If the hydrochloric-acid aid to stomach solvency is desired, a muriate will be used; but, in any event, the quinine is given frequently and in divided doses, thus securing a full and rapid effect. When the hypodermic use of quinine is resorted to a very soluble salt will be selected, but this we shall not discuss.

The general acceptance of derivatives of cinchona bark in treating malaria, has caused neglect of other agents known to have antiperiodic action; it is, however, to be hoped that indigenous vegetable drugs will receive a more thorough investigation, therapeutically and chemically, during the scarcity of quinine. Salicin, as well as other North American drugs, are admitted to have antimalarial value; but the remedy of possibly greatest promise, certainly of great neglect, is *eupatorium perfoliatum*, or thoroughwort. This drug has had a place in the U. S. P., has been extensively used by Eclectic practitioners, and has been used in domestic practice since the days of Thomson; previously by the Indians, whose empiric procedure was not always without virtue, for how long we do not know. Certain it is that *eupatorium perfoliatum* will often relieve the irregular types of malaria when quinine and arsenic have failed. It is said to have been extensively used during the Civil War when quinine was almost impossible to secure in the South. More investigation of its therapeutics and chemistry might give us a real North American substitute for quinine. If bitterness is essential for a "malaria cure," anyone whose

grandmother has given him a few draughts of hot infusion of thoroughwort can testify as to the taste. And, yet, that horrible infusion is laxative, cholagog, diaphoretic, and antiperiodic. Perhaps we forget some of the really good things of empiric domestic medicine.

Tapeworms.—That kindly and incompetent Bourbon, Louis XVI, was not the man to bolster up successfully a political system, moribund from the evil deeds of his predecessors and their satellites, but, after all, the world owes him a debt—at least that portion who, through luxurious living, necessity or carelessness, eat the underdone flesh of beast or fish. It was the unfortunate husband of the equally ill starred Marie Antoinette who pensioned the widow of the Swiss physician, Noueffier, for making public her husband's method of ridding man of his unwelcome cestodian guests.

The writer speaks on the subject of tapeworms as one having authority, since he has three times been the host of these incarnations of laziness; so lazy are they that they take their food predigested and even reproduce their species without going to the trouble of looking up a female.

How the last two guests gained entrance into my intestine I cannot say, but the first can hardly be attributed to *bon vivant* habits. He (or rather it) was of the *tania saginata* variety, and evidently was "adopted" when eating, nearly raw, the flesh of deer, goat or beef, prepared by the simple process of tearing up the animal's musculature and drying it on a mesquite tree upon the plains of Sonora, Mexico.

There was no male-fern available for cure, and the presiding genius of the *botica* said: "Señor, why not the pomegranate?"

An infusion of this remedy was made and taken with seeming success, but the head was not passed, and in about three months there was a return of the parasite. This time aspidium was available and the oleoresin was taken with complete success.

The second and third times *tania solium* was the species and male-fern was also used, emulsified, with the addition of castor and croton oils for No. 2; but, oh what a mess! With more than a casual familiarity of things pharmaceutical, and with respect to the memory of Louis XVI and dear old Doctor Noueffier (who outdid many modern physicians in that he left his wife something she could turn into cash) the statement is here made that nothing tastes as badly and is as hard to disguise as aspidium; but the

stuff can be given in capsules with castor oil, which obviates the necessity of tasting it. Therefore, the disposal of No. 3 was more pleasantly accomplished.

The statement that there is danger of toxic effect from male-fern, when it is combined with castor-oil, seems to be unfounded. Of course, if added catharsis is needed after two hours it should be promptly resorted to, but it is pretty safe to say that the remedy, when given with castor oil and a little croton oil, will do the work with uniform certainty and without danger. Let the patient fast over night, give a saline laxative on arising, then after the saline has acted, administer the male-fern combination. When the worm passes, the patient should sit on a vessel of warm water so that it comes up to the rectum. Always look for the head and for possible detached portions that may indicate another worm.

Incidentally more people have tapeworm than is generally supposed. Also the best treatment for this, as well as for trichina, is prophylactic. *Cook the meat.*

Another Plea for State Medicine.—On the day our delayed cold weather arrived, a manly little chap came to my office with a note from his mother requesting some medicinal trifle. The little man was clad suitably for cold weather except for one thing—he was barefooted.

"Hello, Eddie! Where are your shoes?"

"Daddy got sister some, but he says he'll have to sell a yearling we was aimin' to keep to get me some. Daddy told ma he would sure have to get up a little money for you too, before any more of us got real sick."

Utterly unconscious that he was revealing family affairs, little Eddie resumed: "Daddy's gone to see what he can get for it now. The boll weevils ate up all our cotton an' 'taters ain't worth nothin'. We'd 'versify crops some more if daddy had the money."

May God, regardless of man's various conceptions of deity, bless you, little boy, and cause the light of His countenance to shine upon you, candid little hope of the coming race. Daddy means well and talks for better public roads and schools, but he overlooks a bet. He does not realize that the physical care of his family rests upon the poor foundation of individual good nature in case of adversity. Neither does he realize that the individuals depended upon live under the same economic stress as he, and that the assumption by them of the major part of

society's load is a heavy burden, especially with quinine still going up.

A. L. NOURSE.

Sawyerville, Ala.

PYORRHEA AS A CAUSE OF NEPHRITIS

In September, 1914, Dr. A. J. Schneidenbach referred to several cases of rheumatism treated with emetine. I wonder if it occurred to the readers of *CLINICAL MEDICINE* why emetine did the work? Doubtless, if he had examined the mouths of his patients, he would have found that they had Riggs' disease, or pus cavities of some kind, in their mouths.

I want briefly to describe a case of pyonephritis and albuminuria due to Riggs' disease. In October, 1915, I was called to see a lady of fifty-eight, with a history of having been treated several years ago for tuberculosis of the right kidney. Of late her husband has had the idea that she was using alcohol because he would find her in such a nervous condition when he came home from the office. She would say she was tired of life, complain of feeling unwell, and frequently she was found unconscious.

On examination, I found all the symptoms of Bright's disease, in addition to many bruises received from falling. Urine examination revealed pus and albumin in abundance, and I felt that I had a case for the undertaker shortly, and told the husband that I did not see much hope for her. Her mouth was one mass of pus, there being not a single tooth with a healthy gum around it. Just to satisfy the family that I was doing all I could, I took her to the hospital, even in her uremic and unconscious condition, and ordered emetine, gr. 1-2, given her subcutaneously while fluid extract of ipecac, was to be employed as a mouth wash.

The next day I gave her a bacterin containing the following organisms: streptococcus, 50,000,000; pneumococcus, 50,000,000; staphylococcus aureus, albus and citreus, each 100,000,000; and bacillus coli, 100,000,000. These were all administered in one injection. I continued this treatment (emetine and bacterin) every day or two, and in one week she was able to sit up, when she was removed to her home. The treatment was thereafter continued at intervals of three to six days.

On December 10, 1915, I examined the urine for the last time. All traces of albumin had disappeared, and pus had been absent for several weeks; also, every tooth was

solidly fixed in a healthy gum. When last seen, several weeks ago, this woman was in perfect health and her mouth as clean as that of any healthy person could be. Her husband is the manager of one of the largest department stores in Baltimore, and her case is the wonder of the day.

Tell me that Riggs' disease doesn't kill, and I will show you a number of cases of supposed Bright's disease, of pyorrheic origin, which have come under my care within the last few years, and where the patients have died. We have in the treatment briefly outlined, a cure for many cases of Bright's disease, rheumatism, and neuritis, so called; and I will go still farther and say that I believe many cases of arteriosclerosis are due to mouth infection and can be relieved, if not cured, by this line of treatment.

NEWMAN H. D. COX.

Arlington, Md.

A CHANCE TO HELP

Dr. W. S. Randolph, of Oakhurst, Texas, a regular practicing physician, seventy-seven years old, writes that he has recently lost both of his horses and now has no money to buy new ones. This aged practitioner seems to be very deserving of help, and I know would appreciate anything that any member of the "family" might feel like sending.

ARE YOU PROUD OF YOUR DISPLAY?

A prominent Chicago State Street merchant, when asked what he considered his most valuable advertising-medium, promptly replied, "My window display."

Continuing, he said: "There is no question but that my window display produces a big percentage of my business. A few years ago, I labored under the delusion that my liberal advertising-space in the newspapers would bring in the business; I thought it was sufficient to get the public to my store. I knew I had a good stock, thought I had a pretty-good-looking establishment, and, with some samples of my products in the windows, believed that I was a progressive merchant. However, one day on which I had run an exceptionally large advertisement in the morning papers, I was standing in the afternoon near the front of my establishment and observed several people deliberately walk to my window, then, after a brief survey, turn hastily away. I certainly became interested and remained to review the situation for an

hour. The result of an hour's observation was, that not more than one out of thirty people who had stopped at my window had entered the store.

"I formed a hasty conclusion. I was sure that all of the people who stopped at the windows had read and were impressed by my newspaper advertisement, judging from the manner in which they approached the show-window. It then became clear to me that my window displays did not hold the attention of the passerby. My advertisements drew them there, but they lost their desire to buy. They were disappointed by the display of my goods.

"In a very short time, I had workmen completely remodeling my store-front under the direction of an expert, and my eyes opened wide when I observed the transformation—paneled plate glass—draped drops—mahogany interior woodwork—rich, tasty decorations—an abundance of illumination from hidden sources. The effect was handsome and the arrangement practical.

"From that time on, I've been 'getting them'—at least one out of every ten who stop at my windows comes in. Better, yet, I get a better price for my merchandise, because the surroundings greatly enhance its value. My 'fixup' was the best investment I ever made."

Here, doctor, is a parallel to your case, illustrated by a practical and logical case. What do you sell? Your services, of course. Do you advertise? You certainly do; that is, in many different ways. You say that your work is your best advertisement.

Reflect, does the prospect new patient who came to you through a former patient call again, in every instance, after the initial examination by you?

If not, why not?

Look about you. Perhaps your new visitor felt uncomfortable in your reception room—it was not inviting—the surroundings had an air of dinginess—there was a lack of harmony—showed signs of carelessness—what not?

No doubt you have had the experience of quibbling over the fee. The patient was not favorably impressed by your surroundings: these were mediocre, did not have the furnishings and the atmosphere of prosperity of the modern, up-to-the-minute office—which fittings in themselves convey the suggestion of substantial fees.

Dress up, as did the State Street merchant; let your equipment be your silent salesman, your ethical advertiser, your *prestige pro-*

motor, a medium through which you sell your services and make your patient satisfied with the fees to which you are entitled.

No investment could bring you better returns.

"W"

Illinois.

[This article was sent us by a reader who wishes to remain "incog." I am sure you will agree with me that it is full of good sense; but—*do you intend to take his advice?* Don't you think it would be profitable for you to do so?—ED.]

WHAT WOULD YOU ADVISE?

I will appreciate an opinion from you at earliest convenience regarding the following case. Would also appreciate opinions of readers of this journal. I notice several letters in the March number regarding the Harrison anti-narcotic law, but none relate to just such a case as I have in mind.

I know a physician, of excellent character, an honor to his profession in the district where he lives, who, owing to a strenuous practice in a broken country, became neurasthenic in the year 1900, completely breaking down. He began using morphine, in that year, for insomnia, which was overthrowing his reason. The result was magical; he slept well and appeared to be in good health when under the influence of the drug; but after two years' use of the narcotic went to a sanitarium and had it withdrawn. Insomnia and mental inertia returned and continued after two years' residence in the sanitarium.

He came out and went on a farm, but after about five years without the drug he was still unable to do anything. His wife threatened to abandon him with their three children, which he almost worshipped. He went back to the drug. Results magical—slept well, ate heartily, and built up a thriving practice, until the Harrison law came in. Then he went to a hospital and took the Lambert-Towns treatment; but after one year's residence on the farm without the drug he is still unable to do anything on account of insomnia and melancholic neurasthenia or neurasthenic melancholia.

I might have said his family has forsaken him, calling him "an old drug fiend." The country doctors ridicule him, and this poor man now prays for the government to send him to an institution for life or humanely execute him, religious scruples alone preventing him from suicide.

His fortune gone, forsaken by family and friends, no rest night or day, what is this poor mortal to do? He seems to be worse than "the man without a country." I am interested and would appreciate any advice.

"H."

Missouri.

[Do any of our readers care to comment? The letter is an anonymous one, published only because of the problem presented, which is not unlike that of many other narcotic addicts.—Ed.]

BEWARE OF THESE SUBSCRIPTION SOLICITORS

A number of physicians have been defrauded by men professing to represent the United Students' Aid Society, associated with the Publishers' Association of America, with headquarters at 625 Travelers Building, Richmond, Virginia. We have been sent receipts for subscriptions to CLINICAL MEDICINE paid to a representative of this organization, for instance, to one I. D. Farr. No money has reached us, either from Farr or from the United Students' Aid Society, and letters addressed to the latter have been returned to us undelivered.

This concern apparently is doing business under a number of names; for instance, The Cornell Educational Association, the Michigan Educational Association, and the National Society of Universities.

We warn our readers to be on the lookout for these traveling subscription solicitors. At the present time, we employ few field solicitors for our journal, and if any such person represents himself as authorized to accept subscriptions or collect in our behalf, ask his authority forso doing. He can supply it.

"ARMA VIRUMQUE CANO"

It is with interest that I read your editorial entitled "Arma Virumque Cano" in the March issue of CLINICAL MEDICINE, and I must say that it is good reading, indeed.

One portion of the writing is of particular interest to me, namely, that dealing with the negro question in regard to American warfare. This is a vital point. "How about the southern states, with their huge negro population?" I ask the same question.

Universal armament is surely coming, and I heartily concur in your belief that "the effect will prove beneficial." The negro, like other persons, is touched by discipline

and, for the most part, respects law and order in a remarkable way, when we take into consideration the treatment he receives at the hands of some of the more fortunate races. The treatment of the negro, in regard to enlistment, military service, and so on, has not, in my opinion, been altogether just, and I think that all well-thinking people in this country have the same opinion. He has, beyond a doubt, shown himself capable as a soldier and has fought well for this country.

There are thousands of capable negroes who would readily enlist and would be delighted with any military training given them. However, I think that negroes are less desirous of enlisting now than they have ever been, and in doing so now they would consider a solemn declaration from the government, that they would not be promptly and entirely mustered out of service at the expiration of any war, perfectly in order. Out of 84,365 men engaged in national defense, according to the last census, only 4764 are negroes; and, yet, they comprise one-tenth or more of our total population.

I am of the opinion that CLINICAL MEDICINE is very fair to the negro. I have subscribed for it since my later school-days, and have often noticed evidences of fairness toward the colored brother. However, there is one thing that I should like to see, namely, that CLINICAL MEDICINE use the capital N in Negro. All unprejudiced people will agree that the word Negro is in the same class as the Jew, Irish, Italian, German, Greek, and so on. It is gratifying to note that so many departments in our national government have taken this stand, and especially in the census department, where in its "Bulletin on Negroes in the United States," capital N is used throughout. Such is entirely correct and shows the absence of ill feeling.

Your editorial is a good one, and rich food for thought.

ROBERT A. DEANE.

Victoria, Va.

[As our readers have of course noticed, we have avoided the use of capital letters, as far as possible, and this is the general tendency in the best journals throughout the country. The word "negro" means black, and is generally used to include all colored men, irrespective of birth-place or race. Possibly, with the growth of race-consciousness, it is taking on a meaning comparable, in a way, to such words as Caucasian or Jewish.

We submit the problem to students of language.—ED.]

POSITIONS IN THE GOVERNMENT SERVICE

There are many physicians who would like to get into the government service. Here is a good opening:

There will be an open competitive examination for Chief Statistician for Vital Statistics on April 25, 1916, for men only; eligible to receive position at a salary of \$3000 a year.

Also, there is to be an examination on May 3, 1916, for assistant physicist. This position draws a salary of \$1400 to \$1800 a year.

Anyone interested may address, for details, the United States Civil Service Commission, Washington, D. C.

THE QUICK AND RATIONAL RELIEF OF DYSMENORRHEA

This is for the doctor on the firing-line. Doctor Burdick has written me, saying, "By all means give us an article on dysmenorrhea." So, here goes; and I shall endeavor to make my message as brief and concise as a telegraphic dispatch and as luminous as a mountain burning at midnight.

Dys—difficult; *menorrhea*—the menstrual flow. Besides this, as we know, it is attended by the most excruciating pain.

Query: What produces the difficulty, and why the discomfort and pain?

The upper part of the uterus differs from the lower in more ways than merely in shape—the two halves not always acting in harmony. When the upper portion is ready to expel its contents, it remorselessly exerts its great propulsive force, in an attempt to drive through an almost impervious lower canal the load of which it is trying to get rid.

The lower portion, a segment under the control of another branch, or pencil, of the pentapointed pudic nerve, resists this intrusion and, instead of opening the door to the outer world, stubbornly refuses to let the uterine consignment pass through and out.

This means war—means pain and distress before the final occurrence of bloodshed; for, truly, this way does the womb shed its bloody contents. Remedies that act upon the upper portion of this viscus do not influence in the same way the lower section; and the reverse is also true.

The clinical picture: The patient is in great pain, and often pale; she is covered with cold perspiration; the whole skin seems bleached and feels cold to the touch; sometimes convulsions or syncope attend these attacks.

The mechanics: It is the attempt, on the part of the upper section of the uterus, to drive its contents, by means of powerful and persistent contraction, through a small canal, which the lower segment stubbornly resists.

The therapeutics: First of all, give the suffering woman one granule of glonoin of 1-250 grain, directing her to chew it between front teeth, but not to swallow, so as to let the medicine be absorbed directly from the mouth. A few minutes later, give one granule of hyoscyamine of 1-250 grain, this to be taken in exactly the same way. Then, immediately after its absorption, administer one standard granule of anemonin (gr. 1-128). Leave with your patient the following: Stir into half a glass of water 5 drops of pulsatilla, either the homeopathic mother tincture or Lloyd's specific medicine, and direct her to take one teaspoonful of this mixture every half hour, until relieved. This relief will come soon, almost like a miracle. To compare a patient, thus treated, with one doped with opiates, will be a revelation to you; and not alone so far as the woman's appearance today and tomorrow is concerned, but for as long as the bad effects of the opium-treatment followed the one receiving it. Not infrequently inside of an hour the one treated as I am here telling you how to treat your dysmenorrhea victims will hardly show evidence that she has been ill so recently, even though she was on the verge of a convulsion when medication was started. Moreover, there are no bad after-effects.

The philosophy: The glonoin, or nitroglycerin, containing, as it does, the nitryl radicle (NO_2), promptly and powerfully dilates all the capillaries. The hyoscyamine likewise does this, but tends to render permanent the rapid, though fugatory, action of the nitroglycerin. While the blood of the general circulation is thus being diverted from the pelvic viscera, the anemonin, which has an elective action upon the lower uterine segment, overcomes the latter's contractile resistance thus far offered, greatly relaxes the grip of the circular fibers, and so causes the gates of the canal to be opened. Thus our pulsatilla, through its potent principles, causes the smoothing out of the passage-way, with its corrugated mucosa, and the relaxing of muscular resistance, so that now the flood may pass freely and unobstructed.

This is the story,
This is the song,
The whole is done safely,
It does not take long.

If you have never tried this, there is a pleasant surprise in store for you as well as for your fortunate patients.

C. S. COPE.

Detroit, Mich.

[The "potent principle" of pulsatilla is anemonin, a camphoraceous, crystalline substance, which assuredly acts beautifully in these cases. Being a definite, dependable substance, I greatly prefer it to its parent-substance for every purpose for which the latter is indicated. To relax the uterine spasm, I like the glonoin-hyoscyamine combination which Doctor Cope uses with such success. Of course, an infantile uterus may require physical intervention—dilatation of the os, for instance.—Ed.]

TWO INTERESTING CASES: SECRETING MAMMARY GLAND IN THE MALE; SPONTANEOUS VERSION OF FETUS

I would like to submit briefly the history of two cases which may be of interest to some of your readers:

First case: Mr. G., age 17, reported to me with a pain in his left chest. This young man was physically a well-developed specimen of young manhood. Upon having him strip to the waist, I was very much surprised to find a perfectly developed mammary gland, which, upon massage, excreted normal colostrum. This young man stated that this "tumor" had been bothering him for over a year. The right chest was normal, the male organ was well developed, and both testicles were normal and descended into the scrotum.

The young man stated that he had no desire for the company of the opposite sex, and that he had never had intercourse. Upon careful and thorough examination I could find nothing abnormal for a healthy young male.

Second case: Mrs. S., age 23, primipara. Period of gestation normal; went into labor at 11 p. m., eight days previous to estimated time; labor was rather slow, the pains coming regularly but not of very great force. Vaginal examination was made the following day at noon. Cervix dilated to admit index finger freely. Examination again at 6 p. m., the cervix admitting two fingers; sagittal suture and fontanelles palpable, disclosing and confirming abdominal diagnosis of left occiput

anterior. Head well down on perineum: pains coming stronger and slightly closer together.

When I examined again, at 11 p. m., I found both feet presenting!

The baby was delivered the following night at 7 p. m., as a double footling presentation with prolapsed cord. The baby was in good condition, but the woman suffered a second degree median tear, due to rapid extraction to prevent fetal asphyxia. The mother and baby are thriving, and are in good condition at present—three weeks after delivery.

I would like to hear from some of my professional brothers having had similar experiences.

WM. G. THURBUR.

Los Angeles, Cal.

DISPENSING NARCOTICS IN INDIANA

In the February number of *CLINICAL MEDICINE*, page 110, we discussed editorially the efforts being made in Indiana to prevent physicians from dispensing narcotic drugs. The matter has been taken up by *The Journal of the Indiana State Medical Association*, whose virile editorial on this topic we reproduce herewith:

Considerable controversy has arisen concerning the right of physicians to dispense narcotics, and quite recently many physicians have been advised by druggists and drug inspectors that members of the medical profession are not permitted under the law to dispense narcotics. A communication published in this number of *THE JOURNAL* calls attention to some of the court decisions covering the disputed point.

It is very evident that the State Board of Pharmacy is stimulating the agitation. The contention is that the word "administer," as found in the law, and the word "dispense" have two separate and distinct meanings. In other words, it is contended that the physician would be permitted to administer, meaning to give either hypodermically or orally, one dose of a narcotic drug, but would not be permitted under the law to leave another dose of the drug to be given later to the patient, it being held that in the first instance the medicine is being "administered," and in the second instance, being "dispensed."

As will be noted from the decisions referred to in the correspondence of Doctor Smiley, found in this number of *THE JOURNAL*, the courts have interpreted the word "administer" in its broadest sense, as meaning to give, furnish, supply, provide with, or cause to be given, furnished or supplied. This interpretation is in keeping with the definition of the word "administer" as found in the latest Webster and other dictionaries. Thus, Webster defines "administer" as follows: "To dispense; to serve out; to supply."

The attorney-general for the state of Indiana, under date of January 28, 1913, in answer to a question concerning this matter, said: "I beg to say that the provision prohibiting any person,

except a licensed pharmacist, to retail, sell or give away cocaine, etc., does not prohibit the *bona fide* use or administration of such drugs by a licensed physician, dentist or veterinarian in his practice." The opinion is sustained by the present attorney-general of Indiana in a communication of recent date.

A number of decisions by United States courts have settled the question of the right of physicians under the federal narcotic law to *dispense* narcotics in any quantity, provided such dispensing is to meet the immediate needs of the patient and is made in good faith, and the narcotic is given as a medicine.

Considering all of the facts and the advices we have on the subject, we do not believe that physicians should be alarmed over the activity of the Board of Pharmacy, inasmuch as the contention seems absolutely groundless. However, it may be well, in passing, to call attention to the fact that when the drug-act was under consideration before the Indiana legislature the physicians and druggists in a joint meeting were given a hearing before the committee, and at that time this very question arose and it was agreed among all present that the words "administering" and "dispensing" meant one and the same thing.

It is unfortunate that the Board of Pharmacy seems inclined to take unfair advantage of what even under the most favorable construction for them would be a technicality; and, yet, as we have pointed out before, there is abundant evidence to show that there is a widespread agitation among pharmacists to cripple the profession as much as possible if such action holds out the slightest possibility of benefiting the pharmacists. We do not believe that these efforts ultimately will prove advantageous to those who are putting them forth.

This editorial is supported by a mass of legal and other testimony, giving the court rulings and other pertinent points, in letters written by Doctors Smiley, Thorburn, and Taylor. Every Indiana physician should read carefully the evidence submitted in this number of the *Indiana Journal*.

A GERM SYMPOSIUM

Once upon a time, in the realm of Biology, there convened an assembly of microbes, to consider and discuss their relationship each to the other and their status as to disease in humans. On motion of *Staphylococcus*, *Tuberculosis Bacterium* was voted chairman of the convention. Upon taking the chair, *Tuberculosis Bacterium* made the following remarks:

"Fellow germs: I feel much honored by the choice you have made for presiding officer, and I return grateful thanks. As I understand the call for this convention, it is to consider our relationship to each of our different species and our office and functions in respect to diseases in man.

"The prevailing theory of disease among the wise men devoting themselves to this

problem is, that for every disease in the human there is a germ that is the exciting cause thereof, a germ peculiar to that special disease; even though not every one has as yet been demonstrated. One of the learned historians of our species has stated the following:

"It must be remarked, furthermore, that even the typical forms (of bacteria) recur only under quite definite conditions, and that they vary according to the nutrient media in which any particular bacteria are growing. This holds true, indeed, to such an extent that the prevailing form of a given species may be assigned to one group or another, according as it has been taken from one or another medium.

"One of the greatest services Koch has rendered to bacteriology is his invention of pure culture, by means of which such isolated colonies, originating from a single germ, can be cultivated at will and obtained free from admixture with germs of other kinds. Such pure cultures, reared under perfectly similar conditions, always agree in form and physiologic activity. But this is not real constancy. The similarity does not depend upon the invariability of the bacteria, but upon the fact that the conditions of life suffer no alteration. If the conditions fluctuate, the bacteria will also vary in form and physiologic activity. . . . The value of the individual shapes fluctuates very greatly. At times it is the transitory form, at other times, the common nature form that is deemed typical. On this account, it is superfluous, at least in the beginning, to determine, with rule and compass, the regulation breadth or length of a species, while general morphologic questions remain unsettled. . . . Bacteria depend for their provision of food and energy upon the conditions of nutrition. If these conditions remain constant, one of three things comes to pass. Either the bacteria change in form and action and adjust themselves to the new conditions, or they form spores, which preserve the species until better times for them to return, or else they fail to adapt themselves at all and, so, perish."

The president further remarked: "The same historian of us germs has stated in substance as follows:

"The tubercles lodged in the leguminosæ and some other plants have entered into an intimate union, or symbiosis, with such growths, and by our aid these plants are able, even when growing on poor soil, to avail themselves of atmospheric nitrogen. By

inoculation of the soil with material taken from the root-tubercles and likewise by the cultivation of those useful plants upon which these tubercles thrive and are symbiotic (or in partisanship with), the yield of many poor soils may be considerably increased without the application of manure.'

"Dr. Henry Plotz, in his biologic studies, has identified the bacilli found in Brill's disease and in typhus fever as being two different strains of the same microorganism. The first historian quoted says of my own family, that of the Bacteria:

"I have arrived at the definite opinion that the tubercle-bacillus is the parasitic growth-form of a pleomorphic mold, and is not a true bacterium at all, but, in respect to its morphology, is closely related to the ray-fungus. This has been confirmed by Coppen Jones.'

"In view of the divergent and contradictory theories as to our biological status and work in nature, we microbes have met in council to consider, and, if possible, determine our actual position in the realm of biology. The convention is now in session, and it is up to the membership to express their views."

Streptococcus having obtained recognition from the chairman, proceeded to remark as follows:

"Honored chairman Tuberculosis Bacterium, and microbes in general: There can be no question that tubercle bacteria are associated with the human race, both for good and evil, but I protest against the thought that they are the sole cause of tuberculosis in mankind and the lower animals. Are we not also as much in evidence in the disease when that material which humans call pus is produced as a result of destruction of live tissue of the air-cells?"

Just here Staphylococcus interrupted Streptococcus and remarked as follows: "I, too, have as much right to be recognized as a causative factor in the role of tuberculosis as Tuberculosis Bacterium and my fellow germ Streptococcus. We three are always found associated in tuberculosis."

Here Pneumococcus, having received recognition from the chairman, proceeded to state: "I protest, honored chairman, against the assumption both of Streptococcus and of Staphylococcus, for, if their contention is sound, then they also are concerned in the production of pneumonia, of which all biologists admit I am the causative factor."

Here also arose Pyogenic Bacterium and remarked: "I would ask of my honored

relative and this collection of germs a few questions, namely:

"First: Do our comrades Streptococcus and Staphylococcus exist in putrefactive material merely as destructive agents in the animal organisms, or do they dwell there simply to satisfy their own need of energy and in order to proliferate?"

"Second: Do we germs (called 'specific,' by the humans) vary in our capacity for the production of disease?"

"Third: Do our so-called 'specific' disease-germs affect all animals and humans with the same typical disease?"

"Fourth: Does a 'specific' disease-germ cause only one disease?"

Here one of the Saprophyte microbes, having obtained recognition from the chair, answered these queries as follows: "Honored chairman and fellow microbes: Our associate member, Pyogenic Bacterium, has favored us with four queries for our elucidation. It is a hard task he has given us to perform; however, I will do my best to answer his queries.

"With regard to the first query: 'Do we germs exist in humans and animals solely to produce disease; or do we inhabit organisms simply to carry out the first law of nature, self-preservation?' I believe our comrades, the germs of putrefaction, exist only where there is dead organic material to be removed. Like the buzzard they simply act as scavengers; but they also, to a certain extent, adapt themselves to their environment. Living cells, when they become enfeebled through errors of hygiene and poor sanitation, lose their protective power against our attacks.

"The second query is: 'Do our so-called "specific" germs vary in their capacity to produce disease?'

"Among the humans who have experimented in this direction, Buchner was the first to succeed in demonstrating that the deadly (to humans) so-called Anthrax bacilli could be so modified artificially as to render them innocuous to humans, and cause them to behave like perfectly harmless saprophytes. The same applies to chicken-cholera, as proved by Pasteur.

"The third query is: 'Do the same "specific" disease-germs affect all animals with the same typical disease?'

"I would answer, No! Take the bacilli of diphtheria, for example. These may occasion local diphtheria, or paralysis, or acute blood-poisoning. Again: The bacteria of erysipelas may bring about erysipelas of the

skin, but they are likewise able to produce inflammation and suppuration of the lung tissues.

"What I have already stated will do for an answer to the fourth query."

Staphylococcus Pyogenes Aureus having obtained recognition, proceeded to say:

"Fellow microbes: It has been in the power of our species of germs, by our intimate connection with many forms of disease, to obtain the following information:

"We have found that, when we by our presence so affect intestinal human tissues that they lose their protective influence against us and other germs, such bacteria as saprophytes may enter these tissues and even penetrate further into the body, as for instance into the nearest lymph-glands. The common bacilli coli communis, my associates, can do this, as they well know. But they also know that, by change of environment and conditions of life, they are modified in structure and constitution to such an extent as to become less harmful to humans.

"Were our enemies, the doctors, to recognize more fully that certain drugs have this modifying influence upon our wellbeing, we should have a poor outlook for our future existence."

Just here *Bacillus Pyocyaneus*, receiving recognition, addressed the convention as follows: "*Tuberculosis Bacillus* and microbes assembled: We would wish to contribute our germ unit to this discussion, and our conception of disease, and the role played by us microbes. Our view is, that the internal condition of an organ, a tissue or a cell, whether in plants, animals or humans, alone determines the character of diseases and our status as germs. This is the view held by that human philosopher Virchow. We know that this position is opposed to that held by Pasteur and Koch—men who, opposing the conception of Virchow, have divided the thought of our enemies, the doctors."

Plasmodiophora Brassicæ here took the floor and proceeded as follows: "We believe from what has been stated by our fellow germs, that there is another condition necessary to our proliferation. The family of cells in the universe, of which we germs are members, are the morphologic units of all organic nature. At the death of cells, they are resolved into effete material, very deleterious if not removed and disposed of, but retained in an organism.

"The vital functions of cells are as follows: Contractibility, irritability, and automatism, reception of nutritive material, and its

assimilation, metabolism, secretion, excretion, and, finally, reproduction.

"All cells are sensitive to, and influenced by, their environment. They are repellent to deleterious influences in proportion as they possess that force or principle which we call vital. On the contrary, as they lack this force, they are open or subject to the invasion of disease. This applies in greater force to us germs, especially when those abominations, debilitating drugs and chemicals, are forced upon us by the doctors.

"During our life-history, we are favored or injured by our environment and circumstances over which we have but slight control. Take as an example cells of animal tissue exposed to contact with the atmosphere and subject to its vicissitudes, such as low temperature and sudden changes, their force (we call it vital) being reduced to a very low ebb for the time being; and in such cells, when we invade the tissues of animals, there is at once inaugurated a conflict; which side will come out victorious depends on various circumstances.

"If the animal cell has sufficient resistance, then *we* microbes are a failure. On the other hand, should the vitality and resisting power of animal or human cells be very low and other circumstances favorable, then *we* microbes are in our glory."

Bacillus Coli Communis now arose and addressed the chair and convention:

"Chairman and fellow microbes. In view of known facts and what has been stated in this convention, I wish to offer a resolution for the acceptance of this honorable body. First, however, I would remark that we may consider that distinguished individual, General Gorgas, our most doughty enemy, inasmuch as he has shown that sanitation and hygiene render it impossible for members of our glorious race to proliferate and multiply. Our only hope of a continuation of our kind is, to seek out and make our habitation among the slums of the cities and other unsanitary places where we can develop in peace and plenty, undisturbed by those ridiculous highbrows.

"Therefore, be it resolved: That we of the microbe world earnestly protest against the pernicious interference of sanitarians and the efforts of the rulers to change the condition of the slums, our preempted homes, considering that we are the work of the Creator as much as are humans; therefore, have the same right to live as have they."

Just at this crisis a crash startled them all and a vile and pernicious odor filled the

convention, which caused a most rapid dispersion of the assembled members.

At that moment I awoke with a start, to find that the convention had been merely a dream story, and the only fact was the breaking of a bottle of formaldehyde, which had fallen from a shelf over my head and filled the room with its fumes, to my intense annoyance.

Thinking my dream might interest some members of our noble profession, I submit it for publication.

A. T. CUSZNER.

Gilmore, Fla.

TRAINING FOR EYE- AND EAR-WORK

Physicians who wish to become internes in the Charitable Eye and Ear Infirmary, at Chicago, can take an examination on May 6 in the cities of Anna, Carbondale, Charleston, Chicago, DeKalb, East St. Louis, Elgin, Jacksonville, Kankakee, Lincoln, Macomb, Mt. Vernon, Normal, Olney, Peoria, Pontiac,

Rockford, Springfield, Urbana, and Watertown. Examination will consist of the following parts, weighted as indicated:

Training and experience	2
Medicine, surgery, eye, ear, nose, and throat.....	8

License to practice medicine in Illinois is required. This year's graduates are admitted to examination.

IT'S ALIVE

CLINICAL MEDICINE has become more to me than a mere medical paper. It's "alive," and the only live medical paper I know or want to know.

J. M. G. EWING.

St. Vincent, B. W. I.

[Doctor Ewing shows his interest in *our* journal in the most practical way—by sending us suggestions for making it better.—Ed.]

IMPORTANT ANNOUNCEMENT

Readers of CLINICAL MEDICINE have doubtless seen the grossly exaggerated and untrue newspaper reports of an "explosion" in one of the buildings of The Abbott Laboratories, which was alleged to have "wrecked" this property, and no doubt many of our friends and customers are under the impression that we have suffered great loss.

The truth is that a small fire with ignition of gases in a closed room took place on the top floor of our manufacturing building shortly after midnight, April 21. The damage was slight, consisting mainly of broken window panes, some loss of glassware, and cracking of temporary partitions. In the aggregate, the property loss was comparatively inconsequential. This building is of reinforced concrete and brick, and is fireproof. No one was hurt, our plant, and important apparatus were not seriously injured, the machinery not at all, and the following morning our entire force went to work as usual.

In view of the absurd newspaper reports of "war plots," enormous profits, and the like, we wish it understood that The Abbott Laboratories have not manufactured and are not now engaged in the manufacture of ammunition or explosives of any kind for the warring nations, our sales abroad consisting entirely of medicinal preparations such as we ordinarily sell to our customers here at home. Our prices remain as low as are consistent with Abbott quality—the best. Our profits are, as they always have been, very modest.

I have received many expressions of sympathy from friends, customers, and acquaintances, all of which I appreciate very much. Thank you all. It gives me pleasure to assure you that everything is all right in Ravenswood, and that our business is going on as usual—only bigger than ever.

W. C. ABBOTT.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by *GEORGE F. BUTLER, A. M., M. D.*

OF the various heart disorders that I have observed in my practice, mitral stenosis is the one that most influences the uterus. Be it congenital or secondary to rheumatism, it is notably the disease of passive congestions, the affection in which circulatory disturbances most early manifest themselves in remote organs. Painful dysmenorrhea, menorrhagia, and metrorrhagia are common results of mitral stenosis. Next in order, according to my observation, come mitral insufficiency, and then diseases of the aorta. I believe that menstrual disturbances occur in more than half of the cases of heart disease.

The first manifestations usually occur at puberty, the cardiac lesion presumably not having been noticed; hence, great is the surprise to see that the establishment of the menstrual function is attended by difficulties. There may be profuse loss of blood, and dysmenorrhea may be present; the menses also may be painful and irregular. Many doctors, however, seek the explanation of these symptoms in the tuboovarian region, or they may suspect chlorosis. The general traits of cardiac chlorosis may be present: pallor, dyspnea, amenorrhea, nervous irritability, dyspepsia, constipation, even the hemic murmurs at the base of the heart or in the cervical vessels. After a few regular menstruations or even after the first menstruation, there comes a period of amenorrhea lasting several months. This is succeeded by hemorrhagic flows, now abundant, now barely appreciable, and of such irregularity that the young girl is uncertain whether or not they correspond to a menstrual epoch.

During her entire genital life, a cardiopath is subject to these various accidents. Mitral lesions predispose to hemorrhages much more than do aortic lesions, because the former favor passive congestions, while the latter are accompanied by anemia. Two conditions are essential for the production of hemorrhage: first, a comparatively good general condition of the patient; second, and still more important, is a heart of sufficient vigor to coun-

teract, successfully, the lesion. When the heart weakens, when edema and dyspnea appear, in a word, when failure of compensation occurs, not only the hemorrhages but also the menses are suppressed. There is, then, a period of amenorrhea which lasts as long as does the failure of compensation.

The menopause may be early in presence of mitral lesion; in cases of aortic lesions, the menopause comes late. Owing to the arterial hypertension incident to, and the passive congestions associated with, cardiac disease, together with the arteriosclerosis so frequent in women that have reached the "dangerous age," the menopause is frequently characterized by profuse menorrhagias and metrorrhagias. The menopause over, hemorrhages may occur that are solely due to cardiac lesions.

The practical conclusions to be derived from these observations are these: First, careful examination of the heart is indicated in all menstrual disturbances of obscure origin; second, the treatment of menstrual disorders secondary to cardiac lesions must be directed to the heart, not neglecting, however, to attend to any local uterine lesion that may exist.

I have observed also that there subsists a very close physiologic relationship between the nose and the sexual apparatus. I have looked up the literature on this subject and, judging by what I have observed myself and by the observations of others, I have come to the following conclusions:

1. In a certain proportion of women whose nasal organs are healthy, engorgement of the nasal cavernous tissue occurs with unvarying regularity during the menstrual epoch, the swelling of the membrane subsiding with the cessation of the catamenial flow.

2. In some cases of irregular menstruation in which the woman occasionally omits a menstrual period without the external flow, the nose is involved. At such times, the erectile bodies of the nose become swollen and turgid, as in the period when all the ex-

ternal evidences of menstruation are present.

3. The monthly turgescence of the nasal corpora cavernosa may be bilateral or confined to one side, the swelling appearing first in one side and then in the other, the alternation varying with the epoch. 4. The periodical erection may be inconsiderable and give rise to but little or no inconvenience; or, on the other hand, the swollen bodies may occlude the nostril and awaken phenomena of so-called reflex nature, such as coughing, sneezing, and so on. 5. In some cases, there seems to be a direct relationship between the periodical engorgement of the nasal erectile bodies and those phenomena referable to the head that so often accompany the consummation of the menstrual act. 6. As a natural consequence of the phenomena above described, the nasal mucous membrane at such periods becomes more susceptible to reflex-producing impressions, and is, therefore, more easily influenced by mechanical, electrical, thermic and chemical irritation.

7. The condition (engorgement and increased irritability of the nasal mucous membrane) indicated above, together with the phenomena that accompany it, are also found during pregnancy at the periods corresponding to those of the menstrual flow. There is also reason to believe that similar phenomena occur during lactation and the menopause. 8. Vicarious nasal menstruation is a familiar condition. It may precede the uterine flow or it may occur from suppression of the normal flow. 9. This vicarious hemorrhage may represent menstruation during pregnancy or it may appear toward the close of the menstrual life, or after the removal of the uterus and its appendages. Various nasal hemorrhages also occur in boys at or near the age of puberty. 10. There exists a well-known sympathy between the erectile portion of the generative tract and other erectile structures.

11. The occasional dependence of phenomena referable to the nose occurring during sexual excitement. The data derived from clinical observation are as follows: (a) in a fair proportion of women suffering from nasal affections, the disease is greatly aggravated during the menstrual epoch or when they are under sexual excitement. (b) Cases are also met with in which congestion or inflammatory conditions of the nasal passages make their appearance only at the menstrual period or at least are only sufficiently annoying at that time to call for medical attention. (c) Occasionally the discharge from nasal catarrh will

become offensive at the menstrual epoch, its disagreeable odor disappearing during the decline of the ovarian disturbance. (d) Excessive indulgence in venery seems to imitate inflammation of the nasal mucous membrane. (e) The same is true of the habit of masturbation. (f) The existence of uterine or ovarian disease exerts, sometimes, an important influence on the clinical history of nasal disease.

I have found many diseases of the stomach to respond well to hydrotherapy. Here are a few points that the general practitioner can put into practice to considerable advantage in his cases of stomach diseases.

Cold water is more stimulating to the gastric secretions and, contrary to the prevailing opinion, is a better laxative than hot water. Hot water is a better diaphoretic, is more soothing to the stomach, is a better solvent, and is more generally applicable as a remedial agent. The drinking of hot water is attended by the greatest benefit in chronic gastritis, but its use in this way must be limited to those cases in which the motor function is intact. It should be given in quantities of from eight to sixteen ounces one hour before each meal and at bedtime, and should be taken as hot as can be borne with comfort, and be sipped very slowly. It may be used with almost equal benefit in functional conditions associated with normal motor activity.

Externally, cold applications are indicated in acute gastritis and in the control of hemorrhage and vomiting. Hot applications should be employed in gastralgia, hyperesthesia, and chronic gastritis. The Scotch douche is of benefit in neurotic conditions. The essential factors governing a successful hydrotherapy are: an exact diagnosis, a thorough knowledge of the causative influences and of the effect of the remedial agents, and the confidence and cooperation of the patient.

Lavage of the stomach is indicated in the conditions in which the drinking of water is contraindicated. In dilation it is a sovereign remedy. Regarding the use of the stomach-tube, I wish here to quote a few passages from Dr. A. L. Benedict, as follows:

"Don't use the stomach-tube simply because you want to be considered scientific and up to date.

"Don't withdraw stomach contents for examination unless you are prepared to examine them.

"Don't discard external means of physical diagnosis because you have a stomach-tube.

"Don't expect too much from diaphanes, electric buzzers, buckets, complicated tubes, and the like. All of these have their uses, but in general they are available in very rare cases.

"Don't pass the tube without first inspecting the mouth and throat and examining the heart and arteries, and at least inquiring as to pregnancy, piles, and other possible contraindications.

"Don't pass the tube as a means of treatment unless you know precisely what you want to accomplish with it.

"Don't introduce a weight and bulk of water which you would consider injurious if swallowed. As a rule, don't introduce more than a pint at once, and almost never more than a quart.

"Don't be deceived by the ball-valve action of a particle of food or any other cause which may allow water to remain in the stomach. Make sure that you withdraw as much as you introduce, except that you may allow a little for leakage through the pylorus or possibly absorption. Remember that the more a stomach can hold, the less it ought to.

"Don't imagine that the gastric douche will cure all of the diseases of the stomach. You would laugh at a gynecologist who held such a view about the vaginal douche.

"Don't imagine that a stomach is doing well till it can digest plain but varied diet without mechanical interference. Don't speak of a case as cured until the patient can indulge in all the ordinary food without medical aid and without injury.

"Don't let the patient learn to pass the tube himself. This rule holds for his benefit as well as yours.

"Don't fail to use the tube or to have it used when the indications outweigh the contraindications."

I have often wondered why physicians do not observe patients more, instead of relying entirely on laboratory reports. The appearance of the tongue, for instance, tells us much of the patient's condition and the indications for treatment. *The Indian Medical Recorder* prints the following suggestions:

"A broad, pallid tongue, with a loaded base, says atony, and refers you to a want of action of the entire viscera below. The remedial agents would be, cathartics and tonics, especially those mild but effectual in character.

"A shrunken tongue, pinched in expression,

indicates functional inactivity of digestion, and requires great care in choice of food as well as quality. In this condition of the tongue, we have atony also. It is the tongue of advanced fevers, inflammation of the mucous membranes, and want of assimilation; hence, great caution both as to remedies and food. Here, we must not use cathartics. Mild aperients may be carefully used.

"A contracted, pointed tongue, with dryness and dark fur, is the usual tongue of typhoid fever and other low grades of fever, when all thinking minds would use great care in the treatment and food.

"The dryness or moisture of the tongue denotes the extent of the disease of the intestines, and will point us in that direction.

"A fissured tongue points to the kidneys—either an inflammation or something wrong with secretion.

"Yellow coatings are usually associated with morbid liver and want of biliary secretions, and would indicate mild hepatics and tonics.

"Raised papillæ, bright-red, denote irritation of ganglionic nerves and irritation of stomach, especially the mucous coating. It shows exhaustion, no digestion, and need of rest. Nux vomica, 20 drops, and the food to be warm and taken in small quantities. Bismuth and pepsin after food.

"A broad, thick tongue, papillæ not visible, but looking raw, denotes a septic condition of the blood, and points to typhoid fever. It indicates, if deep-red, sulphuric acid; if pale, sulphite of sodium. Liquid food sipped warm, in small quantities.

"Deep dark-red tongue and dark coating indicate a septic condition of the blood.

"Shades of dark-brown and black denote a typhoid condition or a septic condition.

"A pale, dirty fur on the tongue denotes acidity and a septic condition of the system. It indicates sulphite of sodium; but, if the membranes are deep-red, sulphuric acid will be admissible, because it will show an alkaline condition of the blood.

"A contracted, pointed tongue, inability to hold it still, and drawn to one side of the mouth, denotes trouble with the nerves and perhaps of the brain. Requires great care and study of the condition.

"A dry tongue always denotes feverishness, an inflammatory condition, or affection of the nerve-centers of the ganglia.

"A thick tongue and curved, edges upward, denotes atony of the nerve-centers of the ganglia, requiring stimulants, nux vomica or strychnine and quinine."

Among the Books

POTTER'S "COMPEND OF ANATOMY"

Potter's Compend of Human Anatomy. Revised by D. Gregg Metheny, M. D. Eighth edition. Philadelphia: P. Blakiston's Son & Co. 1915. Price \$1.00.

This book belongs to a series of the epitome type. Anatomy is a pretty large subject and one which inevitably slips from the memory of any practitioner who is not, by the nature of his practice, constantly kept in contact with applied anatomy. Hence, a reminder of the essential and salient points, especially of surgical anatomy, is rather a welcome aid to the average physician.

It must be said that Potter's "Compend" displays considerable judgment and discrimination in the selection and the arrangement of material. It succeeds in picking out and serving up the really practical and helpful things. The present edition is brought well up to date by Doctor Metheny, who has wisely left the growing details of embryology and histology to the respective textbooks and confined himself to the explanation of gross anatomy.

DOCK: "MATERIA MEDICA FOR NURSES"

Textbook of Materia Medica for Nurses. Compiled by Lavinia L. Dock. Fifth edition, revised and enlarged. New York and London: G. P. Putnam's Sons. 1915. Price \$1.50.

We take it that there is a wide difference of opinion among medical men, and even among the leaders of the nursing profession themselves, as to just how much materia medica and therapeutics it is desirable for a nurse to be taught. We confess to a constantly changing opinion on this problem. Sometimes we find ourselves generously, even recklessly, conceding the trained nurse all the latitude she wishes in these matters; at other times, we are conscious of a lurking suspicion that too much detail knowledge of these things does not enhance her practical value, but, rather, operates to the contrary.

However, Miss Dock, who is a graduate of the Bellevue (New York City) Training School, has written a very moderate and, in

our judgment, a very sensible manual for these young ladies of the white cap. The book certainly contains everything about materia medica that any nurse can reasonably demand to know or make use of; at the same time, the author has wisely withheld all those complex and abstruse phases that could serve no other purpose than to burden and perplex her mind. She has done it better than we ourselves could have done it—what more can we say in commendation? The present revision brings the book up to the status and demands of the day.

HARDY: "THE FLY"

The Book of the Fly: A Nature-Study of the House-Fly and its Kin. By G. Hurlstone Hardy; With an Introduction by Halford Ross. New York: The Rebman Company. 1915. Price 80 cents.

"The old fanciful dogma that everything existing was actually created 'in the beginning' and 'for a purpose' once was ardently championed as controverting aggressive Voltairean atheism; but it must now be recognized as an unwarranted assumption, deduced from an orthodox doctrine of 'design' which, in itself, seems acceptably agreeable with the idea of unity, consistency, and perfection in creation and the Creator. In fact, the said fanciful dogma never really was an integral part of the Christian Catholic doctrine."

Thus, the author in his opening chapter. All of which rather magniloquent dialectic is for the purpose of establishing the humble premise that the house-fly has no rights that anyone is bound to respect. Having thus demonstrated that the fly has no friends, the author proceeds to hit him hard; and, so, the real motif and subject-matter of the book is a figurative "swat the fly," with reasons why it should be swatted. It is a criminal indictment of the common house-fly, with a searching exposé of its antecedents and "personal" record. We may be joking; but, the fact is, Mr. Hardy has produced a most timely and instructive little brochure, showing how the house-fly is a menace to the health of the individual and the entire com-

munity; and in this task he has united the unsurpassed knowledge of a naturalist with the personal experience of a practical hygienist.

BROWN AND MURPHY: "PRACTITIONER'S ENCYCLOPEDIA"

The Practitioner's Encyclopedia of Medical Treatment. Edited by W. Langdon Brown, M. D., and J. Keogh Murphy, M. C.; with an Introduction by Sir Thomas Clifford Allbutt, M. D., F. R. S. New York: Oxford University Press. 1915. Price \$8.00.

Here is an excellent encyclopedia of medical treatment, in a single, not too bulky, compact volume, up to date, not of inordinate cost, and written throughout by men of wide understanding and experience. The work is divided into two parts: first, methods of treatment; and second, agents in treatment. In the first part, certain general forms of treatment are dealt with, followed by the treatment for the various disorders arranged in a systematic manner. Details of surgical operative measures have been excluded, the indications for such surgical intervention alone being given and the general principles of surgical treatment laid down. In the second part, are described the action and uses of different drugs, arranged in classes, as a guide for the practitioner in the principles and methods of medical treatment with the aid of these agents

CROSSEN: "OPERATIVE GYNECOLOGY"

Operative Gynecology. By Harry Sturgeon Crossen, M. D. With 770 original illustrations. St. Louis: The C. V. Mosby Company. 1915. Price \$7.50.

This work is frankly devoted to operative treatment alone; and the author has aimed to present this phase of gynecology in all of its bearings—the indications for operation, the selection of the precise form of operation that is likely to be best suited to the individual case, the technic of the procedures, and the difficulties liable to be encountered thereunder. All extraneous matter, such as general surgical procedures, operations on adjacent organs, and so on, has been omitted, in order to keep the volume within the limits of convenience and portability.

The author considers that gynecologic surgery is entering on a new stage of development. To the past, he grants the invention of methods; to the future, he assigns the more

scientific task of adapting operative methods to the pathology of the individual case. It is to the exposition of this modern aspect of gynecology that Doctor Crossen dedicates his book. Selective treatment is the keynote of the work; and there is no question but that it will aid the practitioner very materially in the elucidation and advancement of this important feature of gynecologic surgery.

STEDMAN: "HANDBOOK OF MEDICAL SCIENCES"

Reference Handbook of the Medical Sciences. Edited by Thomas L. Stedman, A. M., M. D. Complete in 8 volumes. Third edition, completely revised and rewritten. New York: William Wood & Co. Price, per volume, \$3.00.

Each new volume of this revised work that comes to our attention makes us think that the alphabetical range which it covers is the most important and interesting that has yet been covered in the series. Of course, that is not really so. Taken all in all, the several volumes are of about average quality as to significance and interest. Probably the effect upon our psyche is due to the splendid maintenance of quality and vigor in the treatment of the subjects manifested in each successive volume.

The present, fifth, volume takes in the letters H to L, and includes such engrossing subjects as the Heart, Hemolysis, Hernia, Hospitals, Hygiene, Immunity, Infection, Intestinal Diseases, Joints, Kidneys, Labor, and Larynx, besides many others too numerous to enumerate. We have but skimmed the pages and lighted, here and there, upon a few of the most prominent headings, and dipped a little into the respective texts, and are only confirmed in the conviction that this is a magnificent work, a monument to the capability of the editor and his associates, altogether constituting an invaluable assembly of useful information for the reader. Stedman's Reference Handbook should have a place in every medical-man's library.

HILL AND ECKMAN: "TREATMENT OF DIABETES"

The Starvation-Treatment of Diabetes; With a Series of Graduated Diets Used at the Massachusetts General Hospital. By Lewis Webb Hill, M. D., and Rena S. Eckman. With an Introduction by Richard C. Cabot, M. D. Second edition. Boston: W. M. Leonard. 1916. Price \$1.00.

The starvation-treatment of diabetes, as advanced by Dr. Frederick M. Allen, of the Rockefeller Institute Hospital, undoubtedly constitutes a most valuable method of treating that malady. At the Massachusetts General Hospital, so the authors inform us, it has been carried out with great success—with so great success, in fact, that it was thought worth while to publish some of the diet lists fixed upon, as also the details of the treatment that have been adopted. Hence, this little book.

The authors point out that, in carrying out the Allen treatment, the physician must "think in terms of carbohydrate and protein": it is not enough simply to cut down the supply of starchy foods; he must know approximately how much carbohydrate and proteid his patient is getting each day. Since it is not easy for the busy practitioner to figure out these dietary values, the series of calculated diet lists presented naturally will be of service to the practitioner. Various approved urinary tests for sugar, acetone, and the like, are included for the sake of ready reference. The food-table covers most of the foods ordinarily in use.

Some facts relative to the Allen method of treating diabetes were presented in this journal last month. Any physician desiring to familiarize himself with this most promising method of treatment should secure a copy of this inexpensive yet excellent manual, which gives the complete details necessary for best results.

CHAPIN AND PISEK: "DISEASES OF CHILDREN"

Diseases of Infants and Children. By Henry Dwight Chapin, A. M., M. D., and Godfrey Roger Pisek, M. D., Sc. D. Third Revised Edition. With 179 cuts and 12 colored plates. New York: William Wood & Co. 1915. Price \$3.25.

The first edition of this book appeared in 1909, and this is the third, attesting its popularity. From every standpoint it is one of the best books upon pediatrics offered to the profession. This is particularly true as regards dietetics. The directions concerning the feeding of children in this volume are exceedingly complete and of the utmost practicality. Doctor Chapin was one of the pioneers in the development of the new science of pediatric dietetics.

We are glad to observe, however, that the authors of this volume are firm believers in

the value of medicinal therapy. Chapter IX gives a considerable fund of very useful information concerning drug administration. The following paragraph is an illustration:

"Never prescribe a drug without a good and sufficient reason. Prescribe so that the dose will be small in amount and as agreeable as possible. Heavy syrupy mixtures may be agreeable, but are apt to give rise to fermentation from excess of sugar. Pills and capsules are not intended for children, who rarely can swallow them. Prescriptions should be simple and if possible contain but one or at most two drugs. Powders made up with sugar of milk are mixed with water and given from the teaspoon. Tablet triturates form an easy and accurate method of giving drugs. If the child is unwilling, the medication on the spoon is quickly slipped on to the tongue and the spoon held in position well back until swallowing takes place. In this way the child cannot regurgitate it. Begin with small doses in early life and increase if the desired effect is not obtained. Heroic doses, however, may be used in emergencies where rapid and active stimulation is required. Hypodermatic injection of the stimulant is often required to produce desired physiologic effects."

The volume has been largely rewritten and much new material added. The section on infant feeding has been recast, while in the chapters on Infectious Diseases, the Schick, luetin and mental tests have been described. New photographs have replaced many of the old ones.

COMSTOCK: "MOTHERCRAFT"

Mothercraft. By Sarah Comstock. New York: Hearst's International Library Company. Price \$1.00.

This book is an excellent one to put in the hands of the expectant mother, or, for that matter, any mother. It is a thoroughly scientific, and yet thoroughly readable exposition of the responsibilities of motherhood and how they are to be met. In its chapters we find discussions of the days before the stork, hygiene in the baby's wardrobe, feathering the nursery nest, feeding the new baby, care of the baby's feet, development of the child's mind, and other topics.

"Mothercraft" is really one of the best books of the kind we have ever seen, even if it is not written by a physician. Much of the material embodied in this book first appeared in *Good Housekeeping*. We can commend it.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6193.—"Convulsions with Opisthotonos." P. L. W., Ohio, has under treatment a young girl, sixteen years old (previous history is negative), who three months ago became subject to peculiar attacks. From time to time, this girl is taken with violent spasms, the head and heels alone touching the bed. These spells last about three or four and sometimes even as long as forty-five minutes and are attended by temporary unconsciousness. These attacks come on at about the same time each day, and afterward she feels well, but a little sore from muscular contractions. In general, the patient is strong and robust, while her menstruation seems to be normal."

Naturally, without a much clearer idea of basal pathological conditions, we are unable to comment (much less prescribe) intelligently. The seizures are undoubtedly of an epileptic character, but the opisthotonos in this connection is a very unusual symptom. For further elucidation, all the reflexes should be very carefully tested, and also the spine, external genitalia, and pelvic viscera carefully examined. Circumcision and dilatation of the cervical canal possibly may cause the whole train of symptoms to disappear promptly. The exact condition of the body-chemistry must be ascertained.

A reprint of this writer's article on the treatment of epilepsy has been mailed to you and may prove informative. After further study of the case, give us all the clinical data you can, and at the same time have a specimen of the patient's urine examined, when we hope to be in position to advise you effectively.

QUERY 6194.—"Dilatation of the Anal Sphincter. Chloasma." F. L. W., Oregon, asks: "(1) Is dilatation of the anal sphincter much done for constipation, and with what

success? What is the exact procedure, before and after treatment?

"2. What is the cause and the treatment of chloasmatic spots (or spots that simulate chloasma)? So far as I can determine, this patient is normal in every other way, except for having had two intentional abortions. She has no children.

"3. Vasectomy; what is the technic, preparation, and after-treatment? Also, can this be done in a way to sterilize and later release, if it is desired to do so?"

Dilatation of the sphincter ani can hardly be regarded as a remedy for constipation generally, but in certain cases, i. e., where retention of the feces in the rectal ampulla is due to constriction of the sphincter, dilatation will, of course, prove beneficial. Moreover, the entire nervous system is affected by this stretching; frequently thorough dilatation causes the disappearance of a long train of symptoms.

The procedure is extremely simple, and the use of instruments is, as a rule, undesirable. The patient should be anesthetized, preferably with chloride of ethyl or chloroform; but it is not necessary to produce profound narcosis.

The legs are elevated and the buttocks brought down to the end of the table; then the operator inserts his thumbs (one at a time), and dilates transversely (to right and left) until he feels the sphincters "giving" under the pull. Anteroposterior stretching is then done to a similar degree. The patient may be instructed to use, for a week or so thereafter, a rather large, hard-rubber rectal dilator. Where forced dilatation is refused, the hard-rubber dilator may be employed from the first, the patient increasing the size gradually. It should be inserted just before retiring and retained in place for five minutes.

We can best answer your question relative to chloasmatic patches by referring you to our answer to Query 5699, which appeared in this department in 1911, page 573. If you will give us a clearer idea of the underlying conditions, we may be able to extend still more definite information.

The operation of vasectomy is described in all modern works on surgery. It is hardly possible to discuss here the social side of the procedure, but we would refer you to some of the more recent articles which have appeared in the medical press, especially those appearing in recent issues of *The Critic and Guide*. We would suggest that you ask Dr. Wm. J. Robinson (the editor) to express his views on this point.

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 QUERY 6195.—“Mitral Stenosis.” R. O., Maryland, has tried digipoten, also simple infusion of digitalis, in a case of mitral stenosis, but the result, as he feared, was too pronounced, and he had to stop the remedy, as even small doses excited the patient. He continues: “The heart-sounds are vigorous, not feeble, but the blowings at the mitral valve are plain, and there is no regurgitation—which seems odd, but perhaps the aortics hold the pressure. The pulse runs from 90 to 106, and with moderate doses of fluid extract of veratrum I can only bring it down to 80. The blood pressure I have not taken, but, so far as that may otherwise be judged, it is not high. The stenosis is the worry, and I had an idea that perhaps thiosinamin or the galvanic current might be of use. As to the urine: specific gravity, 1026; neutral or, at times, only slightly acid; otherwise negative; 36- to 38-ounce output. The patient weighs 144 pounds.

“The patient was presented at Johns Hopkins, where they verified my diagnosis as mitral stenosis, but held that the case showed myocardial insufficiency; wherein I differed, by holding the case as hyperefficiency, or overaction. Their prescription was, to give plain infusion of digitalis, but this created excessive throbbing and, so, we could not continue with it. The stenosis otherwise seemed not to create any concern to the professors.”

We believe that you will find cactus, in alternation with sparteine, most satisfactory. Cactus, as you are aware, exercises a distinct tonic action upon the heart-muscle and improves cardiac nutrition. Sparteine has been aptly called the “cardiac metronome.”

The action of both drugs is now so well known that we do not deem it necessary to

give more extensive data. In this connection, we would call your attention to the article on sparteine sulphate contributed by Doctor Pettey to *CLINICAL MEDICINE* for January, 1913.

Mitral stenosis is at best a difficult condition to treat, but, with sparteine and cactoid used to effect and arsenic iodide pushed in moderate dosage for some time, you may succeed in making some impression. Digitalis is generally contraindicated in mitral stenosis.

Elimination must, of course, be maintained, while the patient should also be carefully dieted. We should not give more than 1-64 grain of arsenic iodide after each meal, and at the end of two weeks should interrupt this for three or four days; then resume the drug for another period.

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 QUERY 6196.—“Lymphosarcoma.” W. W. C., Texas, writing further relative to Query 6168, on “Osteoma,” in our February number, says: “A diagnosis of sarcoma has been made. The clavicle was removed about five months ago. Some three months later, another tumor (which is now as large as a large orange) appeared almost in the same site as the original one; this had not appeared at the time of my request for help. My “snapshot” diagnosis was “tuberculosis or sarcoma”; but, after a few visits, the patient was induced by friends to try an Osteopath, who said there was a dislocated bone. After several fruitless efforts to reduce said “dislocation” and inflicting much pain, he abandoned the job, saying he *could* reduce it, but, that, owing to her condition (eight months enceinte), it would not be well to push the treatment. After a lapse of some six or eight weeks, the baby having arrived, as well as a large tumor on the center of the clavicle, the patient deemed herself in condition to undergo the aforesaid “reduction of the displaced bone” and returned to the Osteopath. However, when he saw the tumor, he refused to attempt further reduction.

This patient cannot hold out much longer. Some two months ago, I began using mixed-toxin treatment, but to no avail. I then began giving injections, sometimes into the tumor proper and sometimes elsewhere (alternating between the pectoral and gluteal region) of Calup's toxin, emetine hydrochloride, and echinacea and nuclein, with 1-4 to 1-2 percent of quinine and urea hydrochloride. After injecting this combination into the tumor, the pain would cease for about five days. Suspecting the effect to be due to the

last-named drug, I left it out and found my suspicions correct. I again added it to the above mixture and secured the same results.

This was a great relief to my patient, as she then required only a little narcotic to quiet the nerves, whereas before I had been compelled to give her hypodermics night and day to control the pain. Just how long I will thus be able to control pain in the tumor I am at a loss to surmise. The baby is now about five or six months of age and appears robust. What do you think the probability is of the baby's inheriting the disease?"

This is probably a lymphosarcoma, and the end, of course, cannot be far off. There is little, if any, danger of the child being affected similarly; still, the exact nature of the growth should be definitely ascertained. From the rapid recurrence over the site of excision, it would seem that the diagnosis of sarcoma was correct.

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QUERY 6197.—"Typho-Bacterin and Typhoid Prophylactic Bacterins. Emetine in Typhoid Fever." A. C. B., Oklahoma, has administered typhoid-prophylactic bacterins to six persons, and now asks what bad results or symptoms may be expected, if any. He infers that none are anticipated and seldom any occur. He further asks: "Does age make any particular difference as to likelihood of any bad symptoms following; and how should the dose be regulated according to age and weight of the individual?"

"2. In what way is emetine most useful in the treatment of typhoid fever, if of any real value at all?"

"3. In using emetine for intestinal hemorrhage, what is the best and safest dose to give to an average adult? What dangers are to be guarded against? Intense nausea would be a somewhat undesirable condition in a very weak patient, whether there is hemorrhage or not."

Practically no undesirable reaction occurs from the use of typhoid-prophylactic bacterin, save slight smarting pain about the point of injection and occasionally some malaise with slight rise of temperature.

Dosage: First dose, 500,000,000; second and third doses, 1,000,000,000 killed bacteria, each at 10-day intervals.

In times of epidemic, nurses, physicians, and others who are constantly exposed and those who travel, if under forty-five years of age and they have not had the disease, should be immunized by means of this treatment. Three doses generally suffice to confer immunity, which lasts about two years.

According to Major F. F. Russell, of the Medical Corps of the United States Army, the following directions give the best results: "The dose is given at 4 o'clock in the afternoon, then any reaction will occur during the night and will not inconvenience the patient. The immediate effect of the inoculation is a smarting pain, which passes off in a few minutes. Nothing further is noted until four or five hours afterward, when the subject may have a headache and feeling of malaise, while at the site of inoculation a red and tender area about the size of the palm of the hand may appear. The headache and other symptoms are rarely sufficient to interfere with sleep, and by the next morning all symptoms have usually disappeared. The men are cautioned not to drink [alcoholics] on the day the vaccine is administered, as alcohol seems to increase the severity of the symptoms, particularly the headache and the malaise."

The initial dose of typho-bacterin is 50 million to 200 million killed bacteria, administered to combat developed typhoid fever. Following the injection of this dose, the temperature of the patient usually rises from 1 to 1 1-2 degrees Fahrenheit within twelve to eighteen hours, thereafter falling, and remaining low for two or three days, after which it again begins to rise. If now a second injection be given, the same sequence of symptoms follows, but after the third or fourth injection the temperature may fall to normal.

Following this treatment, the typhoid-patient feels and looks better, fresher, more robust. The anxious appearance is lost and he sleeps. Relapses and complications are lessened.

This treatment is practically harmless, does not interfere with the use of other remedial measures, and is, perhaps, the most effective of all of them.

As you are aware, Frazier recently reported 82 cases of typhoid fever cut short in from three to six days by the hypodermic injection of emetine hydrochloride, 1-2 grain repeated every twelve hours.

Doctor Brown, of New Tazewell, Tennessee, in a recent communication confirms Doctor Frazier's testimony, saying: "Everything Doctor Frazier states is true, and more. I have treated typhoid fever, dysentery, and measles with ipecac for many years; emetine gives even better results. In any case, where the secretions need stimulation, it is the remedy of choice." A letter from Doctor Frazier appears in this number of *CLINICAL MEDICINE*. See page 442.

Nausea rarely follows the administration of 1-2 grain of emetine at one dose. We are quite sure we need not point out the desirability of using the sterile solution available in ampules, in preference to an extemporaneously prepared solution of the drug.

QUERY 6198.—“Picric-Acid Dressings for Burns.” J. C. B., Kentucky, asks for a prescription for picric acid for burns.

Picric acid solution is extensively used in the treatment of burns and scalds. After the injured surface is cleansed, the blebs are opened and drained, then strips of sterilized lint or gauze soaked in the solution are applied.

The solution ordinarily employed is as follows: picric acid, 75 grains; alcohol, 2 1-2 ounces; soft water, to make 32 ounces. The dressing soon dries and may be left in place for several days before it is removed, then is renewed in the same manner. This writer, however, prefers to keep the dressing moist for the first forty-eight hours.

Some clinicians recommend a 1-percent solution and call attention to the fact that stronger solutions should not be applied over very large surfaces, for fear of absorption and consequent poisoning.

We are convinced of the desirability of combining picric acid with citric acid, and recommend the use of a solution of the following proportions: Picric acid, 10 parts; citric acid, 15 parts; distilled water, 7 parts. This proves sufficiently antiseptic and possesses the power of coagulating albumen, thus affording protection. Such a solution may be applied freely with a swab, care being taken to medicate the edges of blistered areas. The lesion should then be covered with one or two thicknesses of gauze wrung out of the solution and bandaged snugly.

QUERY 6199.—“The Gibson Ratio.” G. B. W., Minnesota, asks: “What do you think of the value of the ‘Gibson ratio’ between the pulse rate and the blood pressure in the treatment of pneumonia? In most of my asthenic cases, I have found the blood pressure to be below the pulse rate, and I had all I could do to raise it without using aconitine or veratrine. Just now I have had a bad case.

“The patient, a woman, started in with a temperature of 102 degrees and a pulse of 120. Her temperature soon dropped to 99.8° F., never registering higher than 101 degrees; while her pulse ranged between 100 and 120, and the blood pressure between 90 and 100—

always below the pulse. The pulse pressure dropped to 20 or less. There was consolidation over both lungs extending almost to spine of the scapula. The temperature came down by lysis on about the tenth day, but the lungs did not entirely clear up for several weeks; in fact, she was not able to sit up in a chair for two weeks after the temperature had returned to normal. I gave her caffeine and digitalin, in an attempt to keep her pulse rate and blood pressure somewhere near together. The digitalin seemed to have the best effect.”

We regret to state that personally we are not sufficiently familiar with Gibson's theory to enable us to venture an opinion as to its real value in general practice.

As we understand it, the Gibson ratio represents the relation between a decreasing blood pressure and increasing pulse rate occurring in the progress of an attack of pneumonia. When on the chart tracing there runs an open space between the curves of the blood pressure and of the pulse frequency, the patient is comparatively safe; when, however, the two curve-lines cross, that is, if the pulse rate rises higher than the blood pressure expressed in terms of millimeters, then danger threatens.

This theory has been criticized. Thus, for instance, Reilly, in the *J. A. M. A.* for January 15, 1916, asserts that the rule is not always a safe one to rely upon, being of more value in young, strong adults than in children or the aged. As a matter of fact, in asthenic cases, aconitine and veratrine may be given, provided they are associated (as in the dosimetric trinity) with strychnine and digitalin. In many cases, cactus will meet the requirements perfectly. Usually in the aged and in very small children the blood pressure is low and the pulse likely to be rapid. If you have not read Reilly's article, we suggest that you do so.

Do not forget the extreme value of camphor (hypodermically) in these cases. The woman to whom you refer would probably have responded promptly to this agent.

QUERY 6200.—“Inoperable Cancer of Face.” J. T. C., Mississippi, has under his care an old lady with “an open cancer covering the whole side of her face from her ear to her eye. The deeper muscles of the face are exposed and very sensitive; the eyeball is intact, but exposed. She can not bear the light, so, stays in a darkened room. The pain is constant and so severe that she has slept hardly any for several days and nights.

It is relief from pain and sleep that she begs for. Ordinary opiates have failed her of late. What can be done for her?"

You are confronted by a very difficult problem. This writer would be inclined to use hyoscyne and morphine hypodermically, once daily, and some modified combination of them internally, to maintain the effect between injections. In cases like this one, it is the physician's duty to minimize suffering.

For local application we would suggest orthoform, after first thoroughly cleansing the affected area with a solution of peroxide of hydrogen, diluted with 2 parts of boiled or distilled water. Furthermore, in some of these cases, a mixture of thuja and echinacea—equal parts of the fluid extracts—applied on compresses affords relief; then, again, fails utterly. The best results are usually secured from the use of orthoform, applied in the form of ointment or the dry powder. A local anesthetic might be painted about the periphery of the lesion morning and night.

Under the circumstances, we should not hesitate to give the indicated anodyne "to effect." There is no possibility of the woman's recovery, and she is distinctly entitled to surcease from that constant and irremedial agony.

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QUERY 6201.—"Local Use of Iodized Calcium. Monsel's Solution." U. S. M., Oklahoma, writes: "Some five, six or seven years ago, I read in *The Boston Journal of Chemistry*, about Nichols' brown iodide of lime. Becoming interested, I ordered an ounce of it, and employed it in my cases of tonsillitis, goiter, adenitis, and other conditions. There being no suggestion as to manner of using it, I made a paste with glycerin, applied it with a soft brush or a swab. I met with unusual success. I now should like to know whether iodized calcium has been or can be so used.

"Another thing: Just now I am puzzling over a personal matter, an instance of forgetfulness. Some years ago, a man was brought to me in a state of collapse, owing to hemorrhage from a pile tumor, of a week's duration, and he really looked like a corpse. He was placed on the table, and the sphincter was greatly dilated, the source of bleeding discovered, and then a dilute styptic fluid (iron in some form) injected. The bloody discharge was checked instantly, and recovery followed. However, for the life of me, I cannot recall what particular solution of iron it was. It does not seem to have been the ordinary tincture of ferric chloride."

We note with particular interest your use of a paste of glycerin and "brown iodide" in some forms of tonsillitis. This writer has thus applied calx iodata in very many cases; in fact, has filled the crypts with it, and has secured excellent results. Hence, you will do well hereafter to employ this preparation just as you did the older preparation. Read Lawrence's sketch printed in this journal, December 1914, page 1061.

The preparation of iron you are thinking of is probably Monsel's (styptic) solution, the official liquor ferri subsulphatis, a dark reddish-brown liquid readily miscible with water. It is just possible, however, that you utilized a diluted solution of ferric chloride—liquor ferri chloridi, U. S. P. Either of these solutions possesses strongly astringent and hemostatic properties, although the subsulphate (Monsel's) is universally given preference, as rather milder, because less acid.

We may add, however, doctor, that it would be a little dangerous to inject iron solutions into rectal tissue. (We judge that you gave it simply as an enema.) Do not forget that embolism may follow this procedure. No such untoward result is to be feared, however, if the hemorrhoids are injected with phenol.

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QUERY 6202.—"Infantile Syphilis." H. B. W., Iowa, desires to know "the best treatment for syphilis in an infant."

You will find this subject thoroughly covered in Browning and McKenzie's "Recent Methods and Diagnosis of Syphilis," and Fournier's treatise on the same topic.

Holt also covers the subject very thoroughly in "Diseases of Infancy and Childhood," and points out that the treatment should be instituted as soon as the first positive symptoms of the disease appear or even, under certain circumstances, say when both parents have recently suffered from active symptoms, before symptoms are evident. It is also well to institute antisiphilitic treatment when previous children died soon after birth, such anticipatory treatment to be continued for six weeks; if by that time no further symptoms appear, treatment may be discontinued.

Mercury is as much a specific for hereditary as for acquired syphilis, and perhaps the best way of introducing it into the system is by inunction; ordinarily 8 to 10 grains of mercurial ointment, reduced with an equal quantity of vaseline, is rubbed into the palms, soles, axillæ or inner surface of the thighs

daily. The place of inunction should be changed constantly.

The writer gives gray powder, 1-2 grain, internally, three or four times a day. Holt recommends mercury bichloride, gr. 1-60, well diluted. Should the symptoms be urgent, calomel may be substituted, gr. 1-10, four times a day. Calx iodata is preferable to potassium iodide in tertiary syphilis. Salvarsan has been found as efficacious in infants as in older patients, but this preparation must, of course, be given by an expert syphilologist. Recently, sodium cacodylate has been extensively used to replace Ehrlich's preparation, and it is declared that it gives equally good results, while it is much less toxic. See the editorial and Neiman's article anent this arsenical preparation, published elsewhere in this issue.

QUERY 6203.—"Dementia Praecox? Quien Sabe?" J. W. M., Missouri, has under observation two girls seemingly healthy all their lives. One began to menstruate at fifteen. There was no pain, no excess, indeed, so far as menstruation was concerned everything appeared to be perfectly normal, but she developed at each period a certain degree of forgetfulness, and seemed to be off a little in her mentality. However, she married at eighteen and the trouble disappeared. She is now about twenty-nine years old and has several children.

Her sister, younger than herself, matured at fourteen. She promptly began to develop the same characteristics, and each period they became more pronounced. Now she is twenty years old, and is undoubtedly insane. She does not seem to be "sick" in any other way. "What is the cause?" the Doctor inquires. "Was it a sexual starvation that caused the latter's trouble and sexual gratification that cured the former girl? Give me your opinion."

We have given the problem you present very careful consideration but are unable to offer a definite answer. The fact that both these girls suffered from reflex mental disturbance at the menstrual periods, would show some systemic taint. Of such are the epileptics, and, under certain circumstances, from just such material come the victims of dementia praecox. Very likely your second patient is a victim of this form of insanity.

It is absolutely impossible to state that marriage would have controlled the conditions which now obtain in the younger patient. On the other hand, the bearing of children may and probably does exert an immense influence

upon just this type of patient, and the fact that the now normal elder sister has borne several children is corroborative evidence of the beneficence of reproduction. Sexual starvation (or excess), in our opinion, could not alone produce or remove the systemic toxemia, which could be eliminated, or cease to exist, in the child-bearing woman.

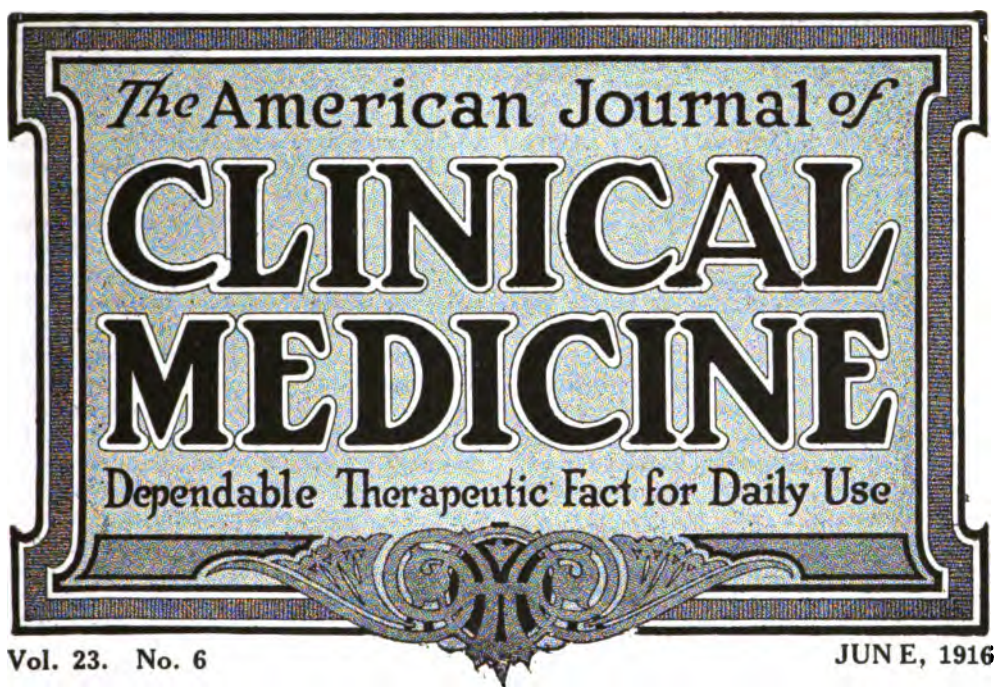
As the girl has gone to the asylum, it is impossible, of course, for you to make a thorough physical examination. But here, as elsewhere, it would be well not only to operate upon a hooded clitoris but to dilate the cervix, correct any malposition of the uterus and thoroughly dilate the sphincter ani. In more than one case incision of an abnormal hymen has proved curative of some of these psychoses, and in not a few instances thorough pelvic depletion and brisk purgation, together with the administration of nuclein, has restored such a patient to health. We wish an Abderhalden test might be made in your second case, which probably (as we have suggested) is one of dementia praecox.

QUERY 6204.—"Chronic Diarrhea." W. E. G., Mississippi, is treating a woman 57 years old who has had a persistent diarrhea for several years. "I have," he says, "tried everything except emetine. Would you advise its administration?"

It is of course difficult for us to prescribe intelligently for chronic diarrhea in a patient approaching sixty years of age without having a much clearer idea of basal pathological conditions. In practically all amebic infections of the bowel, emetine injections prove effective. In this connection, we would call your attention to the article on the use of emetine in amebic dysentery which appeared in the August, 1913, issue of *CLINICAL MEDICINE*; see also interesting papers on the physiological action of emetine in the February and March, 1915, numbers.

If you will give us a clearer clinical picture, and submit to a competent laboratory-man a specimen of feces, preferably with four ounces of urine from the twenty-four-hour output, total quantity voided being stated, giving us his report, we shall be in a position to aid you intelligently.

For the present you might administer every second day a high enema of a solution of the sulphocarbolates, 50 grains to the pint. Internally give zinc sulphocarbolate, grs. 2; hydrastoid, gr. 1-6; brucine, gr. 1-32, every four hours and some good digestive after each meal. The patient must of course be dieted carefully.



The Shrinking Dollar

THEORETICALLY, people in the United States are rolling in wealth these days. Practically, the doctors of the country are not any more prosperous than they were last year or five or ten years ago. The reason—the dollar is shrinking. As Dr. Thomas F. Reilly points out in a recent number of *The Medical Record*, the cost of living has advanced fifty percent within the last two decades. Everything has gone up, except the physician's income—that remains stationary. As a matter of fact, 118 years ago, the Medical Society of the State of New York drafted a table of fees, and these were almost as high as doctors are now getting for the same services, while in some localities they actually were higher; and yet, the dollar at that time had a purchasing power nearly three times as great as it has today.

Measuring the earnings of the physician of the present day with those of organized skilled labor, Doctor Reilly says that we do not make a very good showing. The bricklayer, the carpenter, the painter, and numerous other laborers earn more per hour, as well as more per year, than do many of our physicians. Indeed, as that writer shows, the average earnings of the bricklayer are con-

siderably higher than the average income of the physician, while economically the former is immensely better situated.

"To compare the economic relations between the money invested in a medical career, the time and effort spent in study and preparation, and the lean years with that of the bricklayer would seem at first sight to be a joke," comments Doctor Reilly. If we take into consideration also "the cost of the physician's occupation," his clothing and that of his wife and children, the cost of his office and his equipment, his medicines, his societies, his vehicles—all these things amounting to at least \$1000 per year more than his bricklayer neighbor must have—we find the doctor's dilemma still more serious.

Well, what are we going to do about it? Doctor Reilly has a number of remedies. There are various ways, he declares, in which we can raise our income without violating the ethical code. For instance—

1. The first thing is, "the successful merging of business methods into professional practice"; in other words, put your practice on a business basis. That means better bookkeeping, better collecting, no cutting of fees and charges, and firmness in dealing with deadbeats.

2. Next, raise your fees; and the only successful way of bringing this about generally, Doctor Reilly is convinced, is, for each county society to adopt a fee-table. The ideal method would be, to raise the fees as a whole, so as to approximate a living-wage, just as the trade unions do; the living-wage to be determined through a collective investigation.

3. The fees can be so adjusted that special remuneration may be exacted for special and unusual services. For instance, there should be an extra charge for the first consultation, at which occasion much time is taken up by the exhaustive physical examination necessary for best work. Also there should be special charges for examinations of the blood, urine, sputum, feces, and other secretions.

4. At subsequent office-visits, the physician should make it a routine practice either to make a partial examination with instruments of precision, such as the sphygmomanometer, stethoscope, and the like, or else some special treatment should be instituted. Simply to tell the patient to keep right on doing what he has been doing does not seem to the latter sufficient justification for a reasonable fee. He must feel that he is getting his money's worth. If you actually give him a *quid* for his *quo*, by adding to your knowledge of his case every time he calls, he will pay you more willingly.

5. As to special measures, it is often desirable and helpful to employ some kind of mechanical apparatus for the treatment of the nose, throat, chest or other portion of the body. There is scarcely a disease or complaint that may not be treated by such means. Electrical, x-ray, hot-air, and other appliances have become a necessity. Not only will the patient be benefited if the treatment is given with skill and understanding, but it often brings him back to the office—which is not the case when only a "slip of paper," a prescription, is handed out to him.

6. The physician should charge for the minor professional services, such as writing death-certificates or certificates of health, also for giving advice over the telephone. It is rare, indeed, that any patient will object to a reasonable charge for a service of this kind.

7. Another way of making the patient feel that he is getting more for his money, says Doctor Reilly, is, to supply him with medicine. "Office practice," Doctor Reilly, sets forth, "is cultivated by this means in

places where the fees at the office and at the house are the same. The patient feels that it is worth the extra trouble to go to the office by saving the cost of at least some of the medicines. In these days of war, this has come to be a very important factor. Nowadays, the average prescription costs as much as the office-fee. While I do not advocate general dispensing, still, the use of a few staples, in conjunction with the prescription, will undoubtedly add to the ease of securing the extra fee in the office."

These are some of the suggestions offered by Doctor Reilly by which the thoughtful doctor can prevail upon the shrinking dollar to come out of hiding. If you analyze his argument, it all resolves itself into this: The doctor who wishes to increase his income must do better and hence more valuable work. The modern business firm constantly talks *service* to its salesmen. The retailer who gets the highest prices for his goods is the one who takes the greatest pains to be of help to his customers, who extends to them greater courtesy and shows them how to make the things they buy of the greatest possible benefit. Milady buys her dress-goods from the clerk who can tell her about the matching of colors, choice of trimmings, and will offer her practical suggestions as to how to make up the gown so that it will be most attractive.

The advertising man not only sells to his customers space in his magazine, but *he sells them service* as well. He helps the advertiser prepare his copy, explains to him how best he can follow up his advertising through circular-letters or by personal appeal. The manufacturer, likewise, imparts to his customers the maximum of information relative to his wares, so that they may be used intelligently. If his is an up-to-date concern, it has a complete service department for their comfort and convenience. This department is a bureau of information for all kinds of knowledge, and it keeps people constantly in touch with, and interested in, "the house." The doctor must learn something of this service idea. In the past, his work has been too slipshod. He has been altogether too content to let patients drift into his office, and has made little effort to prevent them from drifting out and away forever.

He must make the office itself more attractive, especially to the women folk; it should be distinctive of his profession, equipped for handling any emergency.

He must make his examinations more thorough, not only because people appreciate

the value of thoroughness, but also because it enables him to diagnose more accurately and thus treat his patients more successfully.

He should know more about the various methods of treating disease and be prepared to employ all physical and medical agencies likely to prove of value.

Every medicinal need of the patient that the doctor can properly supply, he should supply. Every physician should carry a small stock of commonly used remedies, even if he ordinarily prescribes.

He should establish his position as an authority in all things pertaining to health, and put his knowledge at the service of the community.

Finally, he should impress upon his patients the fact that he knows these things, so that they, in turn, can appreciate their importance as measured in dollars and cents.

The great underlying secret of how to increase the doctor's income is, after all, answered in a single word—*thoroughness*. The doctor who will take the time and trouble and energy sufficient to study this income problem from every possible angle and then put into application what he has learned, keeping the service idea in the front of his head, will have very little reason to find fault—provided he has the requisite knowledge and ability, as the majority have.

The man who is trying to do
The best that he may is never
Beset, when the day is through,
By any troublesome doubt whatever;
He is never inclined to sigh
For the follies that are denied him
Nor at night does he fearfully eye
A phantom that hurries beside him.

—S. E. Kiser

THE PHYSICIAN AND THE MICROSCOPE

We can hardly conceive how, in these days, a practitioner of medicine can manage to get along without a microscope. We are not and, as our readers well know, never have been sticklers for all the paraphernalia and technic of the laboratory in the general practice of medicine. We do not believe it is necessary for the doctor to possess all the apparatus and appointments of the medical and biological and chemical and pathological departments of a great university, in order to be a successful practitioner of medicine. We do not even believe it is essential for him to have a working-knowledge of all these branches of medical science. And, if this be heresy, make the most of it. For most of this, he can rely upon the laboratory

expert. But, in the present state of medical knowledge and with our present views of infectious diseases, it is hard to conceive how diagnosis can be adequately performed, even by the general practitioner, without a microscope.

The usefulness of this instrument by no means is confined to rare and obscure diseases. There is hardly an infectious condition with which the doctor may come in contact but owes its positive diagnosis to the microscope, and almost all the metabolic diseases may have invaluable light shed upon them through the glass of an objective. To make mention of no others, surely the recognition and positive detection of such old friends (or enemies, rather) as tuberculosis and diphtheria are of themselves sufficient to warrant the expense and, if need be, the sacrifice of equipping oneself with a microscope. And it may be safely asserted that he who once possesses himself of one of these useful instruments will speedily find the range of its usefulness increasing with every day and week and month and year.

It is usually accepted as a necessary premise that the country practitioner is more or less exempt from the necessity of equipping himself with such ultrascientific armamentaria. Nothing, however, is further from the truth. If anyone is justified in leaving such things out of his equipment, it is the city man, who lives in the midst of a hundred facilities for having this work done for him by specially established laboratories or by the hospitals with which he may be affiliated. The country practitioner, on the other hand, has no such facilities at hand. Either he must do his own microscopic work or it will largely go undone. And, while, as we have intimated, there is doubtless a great deal of ultrarefinement of laboratory work which is not really essential to the general practitioner, the microscope has unquestionably aligned itself, in these days, with the thermometer and the stethoscope as a necessity of practice, rather than as a luxury of technical science.

There is really no economic reason why any practitioner should not avail himself, nowadays, of the service of a microscope. To be sure, to the rural practitioner, its purchase usually means something of a financial effort; but a good microscope does not cost nearly as much today as it used to, and it can be bought upon very easy terms—some of our own advertisers are making very generous offers in this respect. And, we repeat, the sacrifice (if it does entail a sacri-

fice) will be amply repaid by the wonderful addition it will make to the doctor's diagnostic, and therefore to his therapeutic efficiency.

For heathen heart that puts her trust
In reeking tube and iron shard—
All valiant dust that builds on dust,
And guarding, calls not thee to guard,
For frantic boasts and foolish word,
Thy mercy on Thy people, Lord!
—Rudyard Kipling.

A GREAT CRIME: PERMITTING MURDER OF THE WHOLE RACE

There be those among us who by constitution are "mugwumps"—in that their kind are unable to coerce themselves into the role of partisans, but perforce must give to each side of a question its due consideration. This judicial frame of mind carries with it certain disadvantages, for it pleases nobody; rather, it generally causes both sides to a controversy to rank such a judge among their enemies.

Looking as dispassionately as our nature permits upon the ways and queeresses of our fellow men, we must say that, while certainly there is a progress perceptible, the onward movement partakes, as to celerity, of the glacial period. An impulse is communicated to the current of human thought, then, after a period of agitation, there is a heavy surge forward. But this comes after the original agitators have been buried in the debris loosened by their own dynamiting.

The forces most effective in restraining progress are: inertia, ignorance, superstition. Take for illustration the latter factor: In the Gospel we read that Jesus, on one occasion, remarked that the Sabbath was made for man; not man for the Sabbath. This great principle might be applied by the many excellent folks who make of the Bible a fetish, instead of busying themselves learning from its pages how to conduct their lives to the ends inculcated so clearly by its precepts. But, no, these ilk will insist upon making of the great Book an authority upon anything and everything—following the line of that erudite editor who said: "If you are deficient in anything, read the Bible."

The idea that the Bible is an inspired work on cosmogony, was demolished by the voyages of Columbus; still, after more than four centuries gone by, the body of the Christian world has not yet realized this truth. That the scriptures are not a miraculously endowed authority on sanitary science, might be suspected from the tremendous

importance paid to prophylaxis against that scarcely infectious malady leprosy, while altogether ignoring tuberculosis. To this disposition to worship the Book instead of the Deity we may attribute the senseless antipathy against snakes that leads people to destroy not alone the deadly species, but also those harmless ones that are so valuable as exterminators of bugs and mice and other noxious pests of the soil. Also—and this is the true *onus* of this diatribe—we blame this irrational sentiment for the prevalent prejudice against measures designed to prevent the spread of venereal disease, by reason of those people looking upon this as strictly a moral question and outside the pale of social legislation.

Here are some thoughts concerning this group of maladies, as expressed in a paper in *Public Health* by Arthur F. Fischer:

Recent investigations show that a degenerative influence has paved the way for many modern diseases, until it has become a real menace. This we have definitely determined to be the venereal diseases.

These cause the deaths of 250,000 people directly and indirectly each year. They cost the lives of 500,000 prostitutes every six years.

One-eighth of all human disease and suffering is due to these.

Sixty percent of all males are at some time in their lives diseased with them. Sixty percent of the inmates of our insane-asylums are there because of them.

Full eighty percent of children born with sight, but blind within a few days, owe their misfortune to this curse. From 20 to 25 percent of the inmates of the blind-asylums are there because of gonorrhea.

Gonorrheal infection of innocent children is becoming serious; some cities showing 800 to 1000 such infections each year.

Gonorrhea causes 60 percent of unwillingly sterile marriages. It may cause foot abscesses, valvular heart troubles, joint diseases, and many others.

Approximately 80 out of every 100 women who die of diseases of the reproductive organs have been infected innocently.

That 25 percent of syphilis is acquired innocently, that baby blindness has implicated gonorrhea, besides laying the foundation for local tuberculosis, cancer, and ectopic gestation, brings us to face the situation.

General syphilization has lowered resistance to many diseases.

Feeble-mindedness, degeneracy, and insanity often result directly from syphilis. It

is the greatest factor in the death of prematurely born children, the frequent basis of miscarriage.

It is a common cause of general paresis, locomotor ataxia, brain abscess, and nerve degeneration. It indirectly causes one-half of all cases of tuberculosis.

The remedy proposed is: education, co-operation, regulation, a correct estimate of the ravages of the disease, segregation, and effective treatment.

Every word of this terrible presentment is true. Even so, not half, not a fourth is told. But the remedy proposed is the merest twaddle. You may talk till the cows come home; you may preach; you may legislate; yes, Dame Partington with her broom had a better chance against the Atlantic Ocean than you will have of controlling this social evil with your measures.

Let us face the truth honestly. There has never been a people, race, government, climate, latitude, law or religion that has succeeded in preventing illicit sexual intercourse; and, granting that 25 percent of venereal disease is incurred innocently (and we believe this is far short of the truth), it all comes back finally to illicit sexual intercourse as the ultimate cause of this group of diseases.

Every effort to stamp out these maladies, whether by registration of public women, by segregation or by lock hospitals, has ignominiously failed, just as the religious teachers have failed merely by preaching morality.

There remains the one obvious method, as yet untried in the civil community, although in the naval and military it has succeeded better than any other, namely, the direct prevention of infection by means of germicide agents used locally immediately after exposure to infection.

When the need is so great, so evident, why, in the name of the human race, has this obvious method been passed by without being accorded due attention?

Some years ago, the head of a great chemical manufacturing firm consulted the present writer about taking up the manufacture and distribution of this venereal prophylactic—the same that was being used in the Army. The value to the country was beyond computation; the remedy was effective, the profits were large enough to warrant the commercial venture. The writer's advice was against the enterprise. The reason—that all over the country there would arise the cry that the thing was an encouragement of immorality, and, untrue as this was, it would give the firm such an undesirable

reputation as would seriously prejudice its general interests. The idea was dropped.

The situation is startlingly serious, and is growing more appalling every year. Let those who object to this rational method of meeting this crying need devise other ones, and let them have opportunities to put them in operation. If after the fullest trials their remedies have proved ineffective, then, for the sake of humanity, they should withdraw their objections to the one cure proposed and permit its adoption.

Meanwhile, with the greatest reverence for the sacred books of the ancient Hebrews, as exponents of a system of morality which the world has pronounced the best ever placed in the hands of man, we may be allowed to quote the words found in the "Bigelow Papers":

"John P.

Robinson, he

Says they didn't know everything down in Judee."

An old maid is any livin' thing, male or female, human or horse, cat, pig, or chicken, that's so finicky, so p'ticular about some one little thing that don't really amount to much, that he don't pay no attention to some of the really important things of life.—Stephen Conrad.

FOREBODINGS: THE CURE

There is one condition against which the utmost art of the physician fails, and that is, a settled conviction on the part of one's patient and the household that the former will not get well. No matter how powerful the will, how highly developed the intellect, no man born of woman can resist such an influence.

A very distinguished physician, a gifted *raconteur*, a man entirely free from the old-time superstitions that restrict the intellectual flight and clip the wings of reason believed that he would die at about a certain time. Why? Because the men of his family before him had died at that particular time of life. He did die at that age.

A ship-builder determined to dissipate the "Friday" superstition (a thing that dates at least as far back as Babylon, ages before Abraham); so, he laid the keel of a vessel on a Friday, launched it on a Friday, and sent it to sea on a Friday, under the command of a captain named Friday. The vessel never was heard of after its departure. Very likely the crew, disturbed in mind over the matter, fell into a panic at some critical moment and lost the ship, when alert boldness might have saved it, and them.

Well you recollect that, when the Kentuckian was told about whisky interfering with his business, he gave up the business. In the same way, when the patient's entourage is convinced that he is going to die, make him change the environment. Change it radically, completely. Send the patient off on an extended automobile trip, leaving the croakers at home. Let nobody accompany him except someone who doesn't believe that he is ill, but tells him it's all imagination. Take elaborate pains to do all possible for this sick man, but do not tell him so. Belittle his complaints, but attend to them. Give him many frequent doses of hopefulness, as the principium, plenty of good laughs as the adjuvans, a little ridicule as the corrigens, and a life in the open as the menstruum: and there is your official, four-pronged prescription—and appetite, digestion, somnos, sthenia, will follow.

Suppose he dies? Well—think you are the Almighty, do you? Doesn't every human being die eventually? And would you not rather die fighting than lie down and have your gullet cut like a sheep? Our own ideal is the Cumberland, which sank under the attack of the Merrimac, but left her flag still waving over her watery grave.

The greatest and most interesting of all studies is man himself. Astronomy appeals to the imagination; botany, to the love of beauty in floral nature; geology, to the desire to know how the earth was prepared for habitation. But the study of man appeals to every mental and physical quality with which he is endowed. He is still the unsolved riddle of the ages.—Sullering.

THE MORNING REFRESHER

Snatched from business and rest, called away to save a valued friend from impending death, the question tortures my mind: What dread destroyer casts over his bed of sickness the shadow of doom? Is it pellagra, variola, cholera, swift tuberculosis, scalpel-defiant pneumonia? No, none of these, none of the storied plagues or the modern pests. It's impaction; just a huge fecal impaction. The patient, luxuriating in the convalescence from a long and baffling malady, has forgotten that the alimentary canal is also a sewer, and that the channel must be kept open in order to fulfil its function properly; and, so, he proceeded to eat and drink, and was merry, without taking thought for the matutinal intestinal flushing.

Students of Burggraeve begin by observing curiously the insistence by the wise old Belgian upon the preliminary cleansing of the bowels. As he reviews each malady, n

turn and drifts into prophylaxis, one feels inclined to smile over the old surgeon's hobby—for every ailment, he starts out with the stereotyped, "Empty the bowels"; and, in descanting upon the means of keeping well, he likewise "refreshes the bowels" with the morning laxative. If you are sick, take salines; if well, take salines.

That distinguished medical authority, Mark Twain, said that, were he to open a dispensary, he would stock up with a barrel of salts, and let 'er go.

The keynote of our own therapeutic system lies in the familiar maxim: "Clean out, clean up, and keep clean."

By this time, one begins to sit up and take notice. He reflects on the instant popularity of Haig, with his urgency of elimination; of Bouchard, with his demonstration of the evils due to each toxin retained in the system; of Lane, and his energetic attacks upon the mechanical causes of fecal retention. Then perhaps the recollection of some personal experience rises like the flavor of last night's rarebit—some case where one blundered along uselessly until a profuse offensive alvine discharge made clear the diagnosis, and accomplished the cure.

Just as soon as the doctor's curiosity is aroused, his own cure is established. It is very easy to recognize the existence of fecal toxemia and to appreciate the effect of this pathologic factor upon any disease-process, any disordered function. And just so soon as the internal elimination measure is established in the doctor's routine, his success in practice increases and his cases begin to become simpler and more mild. Malignancy is rooted in poor hygiene, internal and environmental.

I think that Nature, that primeval deity antedating grouchy old Saturn, intended her human offspring to begin each day with a long draught from the babbling spring. Possibly she had an object in dissolving in it a pinch of mineral salts, for even the most simple autochthons prized their saline springs. It may be because we have wandered far from nature's pristine paths that the pinch of salts has to be a little larger, but, certainly, modern man is the better for the matutinal saline draught.

We have our individual preferences, founded, perhaps, on the fact that, while the Lord made man in His own image, He did not make any two men exactly alike. Each selects what best suits him and his conditions. I have partaken of a small spoonful of one saline laxative each morning

for twenty years, without having had to increase the dose. This suits me, because it acts once, and no more, an hour after being taken. Other forms continue to act during the day, which is inconvenient in a city not provided with public comfort stations. Many a man is driven to drink by the necessity of patronizing saloons to meet these demands of our delicate nature.

If there is any ill chargeable to this saline habit, it as yet is imperceptible and surely a long time coming. Meanwhile, the refreshing of the bodily and mental faculties, the alertness, the joyousness of living seem to be well worth that problematic evil consequence that constipated croakers apprehend.

"BUBBLE" AND "SQUEAK": A SIMPLE STORY WITH A MORAL

Among the interesting comments upon Morley's able summary of the pros and cons of the injection-treatment of hemorrhoids, originally published in the London *Lancet* and reprinted in last month's CLINICAL MEDICINE, is that contributed by Dr. Ivor Back, himself a distinguished authority on rectal diseases. In this article, he tells a little story that is so *a propos*—so pat, has so many applications, that we reproduce it here for the enlightenment of the members of our own numerous "family."

"There was once upon a time," so the tale runs, "a king in Erewhon, who, like so many a rich layman since his day, thought to ensure his bodily health by having a variety of medical advice. So, he attached to his court two alchemists (or, as some call them, physicians). Their names were Bubble and Squeak, and there was great rivalry between them.

"Now, in the course of his researches, Bubble had discovered an herb with which he claimed he could cure the *fundamental* ailments of the human body. (Bubble was the first proctologist in history.) Squeak said that Bubble was a quack, also that the herb was not only useless, but also dangerous.

"One day the king's wife became conscious of a small pile. She consulted Bubble, and he cured her. So, the king, who was a just king, cut off Squeak's head, because he was a liar. Some time later, the king himself also became afflicted with a pile; but his was a large and troublesome one, which pro-lapsed, and was irreducible, whenever he became excited—as kings are prone to become. Then he, too, tried Bubble's remedy. But this time the wonder-herb failed. So, the

king, who—as we have seen—was a just king, cut off Bubble's head also, because he, too, was a liar.

"The herb—though, for aught we know, it had its uses—fell into disrepute, and this was the result of the exaggeration of the enthusiast, on the one hand, and of the bigotry of the skeptic, on the other."

In this day of the irresistible and irresponsible smashing of idols, it is well to remember that the old methods are not yet all dead. But—there are many remedies that were widely used and highly praised by our fathers and grandfathers in the healing art which are too rapidly passing into disrepute and oblivion. Many of these were good once, and are good now, but, because we do not understand how they act, because the new pharmacology proclaims that they do not act—can not act—we are turning our backs upon them, ready to forget the strong testimony in their favor submitted by men who were but little less wise than we are. In these days, we should be studying our drugs from new angles, as a matter of course, but we also should relearn the lesson of conservatism.

The doctor assuredly is king, but, let him be a just king.

The riches of our Commonwealth
Are free strong minds, and hearts of health;
And more to her than gold or grain,
The cunning hand and cultured brain.

John G. Whittier

WHAT CHEMISTRY MEANS TO THE NATION

We are printing in this issue an article written by an anonymous author, who signs himself "An American Chemist," and entitled "The Arts of Peace." It appeared in the April 8 number of *The Lancet-Clinic*.

It is but very seldom that we reproduce in CLINICAL MEDICINE an article that already has been published in another journal; however, we do not hesitate to deviate from our practice in this instance, because we believe the article to be of vital interest to every good American.

Be sure to read that article. The author shows, in a way which we believe must bring conviction to every reader, the importance of the chemical industry to the stability, safety, and future industrial development of our country. Every physician should realize this, because of the experiences he has gone through during the last two years. If no more, he needs but to scan a comparative table of the prices of drugs current before the

war and those ruling at the present time—with their rapid upward tendency.

Chemistry, pharmacy, and medicine are inextricably interwoven, and all three occupations are an absolute necessity for the welfare of the one hundred million people of this nation. "The Arts of Peace" will convince you of the truth of this statement.

Then let us, one and all, be contented with our lot;
The June is here this morning, and the sun is shining hot.
Oh! let us fill our hearts up with the glory of the day
And banish ev'ry doubt and care and sorrow far away.
James Whitcomb Riley

STUDY YOUR DRUGS

Some day when you tire of the usual dull round of ultra-scientific papers that fill the pages of our journals, take up the study of the powers of some of our commoner drugs. You will soon be interested to note how very little is really known of their action and their *modus operandi*—and how clearly these may be ascertained; how accurately they may be applied to relieve pathologic conditions; and you will wonder what the profession is about, that it neglects this most promising field of investigation. For it is ripe for investigation. The entire *materia medica* remains to be restudied under the light of modern physiologic and pathologic knowledge. The older researches supply us little more than indications of the right directions to go, those most likely quickly to reward our efforts. We have scarcely any researches on drug action in pneumonia since the discovery of the pneumococcus, so how can we believe that the therapeutics of prehistoric times needs no modification now?

Begin with atropine. Study it clinically. Take its power of dilating the cutaneous capillaries. Apply that power wherever such an action is useful, as indicated in any affection that presents this as a desirable and beneficial manifestation. When you have mastered this one drug, you have the key that opens the way to the entire domain of modern, scientific therapeutics.

You may proceed to the study of the other members of the mydriatic group—hyoscine, hyoscyamine, duboisine, scopolamine, mandragorine. You may add as pendants the antagonists and synergists, taking in the pilocarpine group, the gelseminine group, the hypnotic group, the strychnine group; and if you have so far mastered these as to be able to differentiate between the applicabilities of the separate members of each, you will be ready to agree with the writer, that there is

enough in the study to reward the effort you have made.

Why not make a start *this month*?

THE PROBLEM OF THE TYPHOID-CARRIER

Last summer, Mackinac Island had an outbreak of typhoid-fever. This occurrence has been investigated by the Michigan State Board of Health, and the source of infection was traced to a woman employed at a dairy. It was ascertained that twenty-nine years previously this woman had had typhoid-fever. It would be highly interesting to follow her doing the intervening period, since there is no doubt that she has left behind a trail of typhoid-fever victims.

It is gratifying to feel assured that this outbreak was not a consequence of insanitary conditions on the Island and that this lovely resort is free from the faults that toward autumn send so many summer-visitors back to their city homes with systems swarming with the germs of typhoid-fever. The water at Mackinac, we know, is pure and the soil uncontaminated. However, the possibilities arising from the dairy in question may be duplicated anywhere, and with equally disastrous consequences.

The woman we speak of was employed at a certain dairy, and in handling the milk her urinary or fecal excretions in some way imparted the typhoid-bacilli to the milk.

Pleasant thought!

The place swarmed with flies, and there was an unprotected outhouse very close to the milkhouse. Wholly unnecessary, of course! It is a simple thing to construct a sanitary and safe privy, even where there is no sewer-system. We also know how to rid the premises of flies.

How?

Let us tell you.

Doctor Waugh has devised the following plan for application at his summer place near Muskegon, Michigan:

A tract is selected a goodly distance away from the house as well as from the well, and located between these and the lake further down, into which latter the drainage is carried—the water-table dropping in that direction. At the selected spot, a row of holes, each about 18 inches deep, is made with a posthole digger. Into one of these holes the garbage, washwater, and dish-water are poured, and a large fly-trap is set over the hole. When nearly full to the top, this hole is filled in with sand. Then

another hole is utilized in this way. In the place of such a filled-in-hole, there is planted a tree, shrub, or any suitable plant—let us say, beans or potatoes, the garbage thus serving as an excellent fertilizer.

In the autumn, when the Lumsden toilets are emptied, the excrementitious material is carted far back to some unsettled section, where it is deposited in holes similar to those described, and then fruit- or nut-trees set over each one thus filled in.

The conclusion drawn by the Michigan authorities from the Mackinac epidemic is that all milk should be pasteurized before leaving the dairy.

Meanwhile the woman who was the cause of the general infection is detained at the Cook County Hospital, where efforts are being made to rid her of the infectious organisms. Here is an opportunity that should be embraced, namely, to ascertain what agents are capable of ridding one's alimentary canal of typhoid bacilli. It should theoretically be more simple, in the premises, to degerminize a single individual than to pasteurize, year in and year out, the milk of a whole community.

Read the short article on typhoid carriers, printed in the *What Others are Doing Department*, this issue. It will show you how Carnot handles these individuals in France, mainly by the bacterin method.

MOSQUITO-NETS, AND COMPENSATION

Now, that fly-time has come and the buzz of the bluebottle is heard in the land, every sanitary journal, official and departmental, is beseeching its readers earnestly to swat the fly and to put up screens. But, while by the latter precaution we may exclude the germ-distributor, we find that, like other desirable things, this advantage must be paid for. Since Emerson formulated the law of compensation, the rest of humanity has been observing apt illustration of its wide applicability. Ergo—

On taking a flying trip from the still chilly regions of the Queen City of the Unsalted Seas away down into the South, we find the spring far advanced, the air redolent with blooming roses and resonant with the song of birds; however, these joys are compensated by the just-as-early swarms of flies and mosquitoes.

We retire to a bed which our thoughtful hostess has enshrouded with a lofty canopy of lace and drop off to sleep, happy and content in the conviction that we are immune

from winged nocturnal marauders. Good, but the bar that shuts out the foraging "skeeter" likewise hinders the circulation of the air, so that toward the morning hour we awake from a dream of being strangled by two "furriners" drawing a silken cord!

We, as physicians, know well that such dreams are associated with air-hunger. We likewise know that the meshes of a mosquito-net or of a screen admit very much less air than if the circumscribed space is unobstructed for the gleeful cruises of the piratic squadrons of muscous freebooters. In a general way, our patients know these things, of course, but very much in the uninterested, impersonal way in which they know of the Punic wars or the twenty-nine nationalities of Austro-Hungary. More and more the conviction deepens in us that the physician should seize upon the post of sanitary adviser.

The family doctor should be the family hygienist. The field is unoccupied; he has no competition—save, it may be, for the syndicated sageness of Doctor Evans. The externist who sells cures has no standing beside the internist who preserves health. The alarming array of "symptoms" portrayed in the patent-medicine almanac would cease to terrify the man whose doctor has just given him a life-insurance examination and assured him that he ails in nothing and will take down Methuselah's longevity record, if only he will eat more fruit, use less tobacco, squelch his grouch, clean up the back yard, move the toilet further from the well, get the decaying remnants of last year's potato crop out of his cellar and store in their place the sashes of his bedroom-windows, besides attending to a few other items of such everyday commonplace nature that anybody can comprehend them.

Put the proposition—and the monthly salary—before your patients, and hear what they have to say about it.

THE HOSPITAL IN MODERN PRACTICE

Little Rock, Arkansas, has a hospital with three hundred beds. Little Rock is not a large city nor the center of a populous section of territory; yet, the hospital is too small for the demands made upon it.

At Muskegon, Michigan, a youth was seized with acute rheumatic fever, and at once was whirled off to the hospital.

At Rosedale, Mississippi, we find several citizens who have been to the Mayo institution in Minnesota, for surgical operations.

From a small town in Tennessee, two residents are in sanatory institutions in Illinois, one of them for a number of years.

All over the land, the same story is repeated. The sick no longer are cared for in their homes or by the local doctors, but hurried off to city specialists and city hospitals.

What is there left for the doctor to do and how does he make his living? By the time a patient, cared for at home, has paid the salary of a trained nurse, the dietary and pharmacal expenses, there is very little left to pay the doctor; and he naturally prefers to send his patients to the hospital—but where does *he* come in?

Don't be in a hurry to wail over the degeneracy and commercialism of our profession, until you ascertain how the doctor pays for his food, clothing, rent, and the family expenses generally.

Really, it does not seem that this is the time to suggest that the doctor take the position of sanitary adviser, with a monthly salary for keeping his patients well, as much as it is to ask how else he is going to make his living. If there is any other way open to us, please tell us what it is.

The obvious demands action. Why wait, like a balky horse, until one has to build a fire under him to make him get on a move? Novelty attracts attention. Motion, activity wins support. Reforms and innovations are never so successful when one waits until they are forced on him. In any event, we must move, for, if we stand still, somebody else will be stepping on our heels.

No more does the doctor who is called look wise, ask a few questions, and pull out pencil and prescription-pad. We call on various specialists, to examine the various organs, the x-ray man, the laboratory-investigator, the bacteriologist; we let another prepare a vaccine or a serum; the well-starched nurse attends to the details; and, if all goes right and "according to Gunter," the coroner's physician makes the autopsy, and his report completes the case. Four—or five-thirds of his former duties having been absorbed by others, with corresponding portions of the patient's cash, the doctor attends to, and gets, what is left.

And that, generally, is himself.

THE TREATMENT OF GRIP

One qualification appears to be desirable in one who assumes the function of critic or of editor, this being that he know something about the subject upon which he undertakes

to write or about the writer of the stuff he chooses to criticize. For instance, here is a paper in a stately state medical journal, by a gentleman signing himself "Resident Pathologist" to a saintly hospital, on the treatment of bichloride poisoning. Not knowing the gentleman, we will assume that he has a right to ventilate his views, by virtue of his official position. But, we read: "At the present date, there has been no specific treatment worked out [for bichloride poisoning]. The idea of reducing the mercuric chloride to the mercurous chloride, by the administration of calcium sulphide, sodium phosphite, and so forth, has been the one most used. While this may be possible in the test tube, it has not proved of great value practically."

This in the face of the very remarkable work done by Thomas A. Carter in the hospitals of Chicago. Evidently "Resident Pathologist" has not heard of this—but he should have known of it before presuming to write in authoritative manner on a problem on which human lives depend.

And now look at the article on the treatment of grip, contributed by Otto Lerch to the current number of *The Medical Standard*. Lerch has established a reputation as one of the most accomplished diagnosticians in the United States, and—rare combination since Da Costa—as a really skilled therapist. His work, therefore, is well worth republication.

Doctor Lerch dissents from the view that makes the Pfeiffer bacillus the sole pathogenic agent of influenza. This particular bacillus is rarely found in the blood, unless after death, when diagnosis seems rather late for practical purposes. This organism is also found in a large number of acute and chronic diseases. Clinical symptoms show grip as an epidemic appearing regularly with autumn and remaining until spring. "Osler calls this complication the friend of the aged. I wonder whether he looks forward to a visit of his friend now, when he is getting on in years."

"Nothing but hardening of the body and due caution will to some extent protect. . . . Quinine . . . I believe in its prophylactic properties. A 3-grain capsule at night will to some extent protect. . . . Rest in bed is the most important remedy to cure. . . . Nose and throat have to be freed from mucus thoroughly, and antiseptic sprays and gargles may then be used, and the nares anointed with borated vaseline. . . . Silvol may be used in nose and throat in watery solution, 5- to 40-percent. . . . Open the bowels at

once; mustard to chest and feet; ice to head; I have frequently seen dilated hearts shrink to normal size after purgation with calomel followed by a saline laxative. . . . Ventilate, keep temperature of room between 60 and 70 degrees; liquid diet—heavy meals may occasion fatal relapse.

"Specifics we have not. Vaccination and serums have proved failures. . . . Treatment entirely symptomatic; a large dose of quinine with a few grains of Dover's powder, with physiologic measures, will often abort the disease when given at the beginning of the attack. Quinine, small doses, seems to influence favorably the course. Aconite, to relieve congestion permanently; give to effect; bleeds the veins into the arteries, slows heart and respiration, lowers blood pressure and temperature, dilates arterioles and capillaries, increases all secretions and stops pain; a reliable tincture in drop doses—preferably the alkaloid. Aspirin, and the like, may be used to stop pain and lower the temperature when needed.

"Severe cough and pleuritic pains demand narcotics in small, repeated doses—codeine, dionin, morphine, steam inhalations of benzoin, cocaine, potassium bromide (0.6, to 200 Cc. water). A Priesnitz bandage around the neck is useful in severe angina. Ammonium chloride in large doses loosens sticky mucus. Cold is not well borne. Lukewarm sponge-baths, with sedatives or alcohol added; iced towels to abdomen for hyperpyrexia; but let alone a fever of 102 degrees. Watch the heart carefully, using strychnine, camphor, and caffeine early. Reserve digitalis and strophanthus till later, giving them intravenously in collapse. Relieve the neuralgia with quinine. Protect the kidneys by the free use of water and lemonade as long as the heart is intact. Keep the patient in bed and on diet until the pulse becomes steady, and until free from fever for some days. Treat the complications."

We are just going to italicize the last injunction: "Finally, a *thorough examination of the patient has to be made in each case.*"

How often—oh! how often—in the days that have gone by, we have tingled with shame at some unlooked-for *contretemps* that has arisen, which we could easily have prevented had we taken the trouble to make that thorough examination, that really did not seem to be required at the time. Truly, it has been the rare exception that we have made such a searching investigation without discovering something of value, even of importance.

We have given merely these extracts from Lerch's paper, in order to show its practical value. The article appears in *The Medical Standard* for April, and it is well worth the trouble of procuring a copy.

The most precious things in the world are those which cannot be bought—the tender touch of a little child's fingers, the light in a woman's eyes, and the love in a woman's heart.

Myrtle Reed

PRACTICAL POINTERS FOR JUNE

Summer is at hand—and summer-complaint. Watch the baby's diet, and lay in a stock of intestinal antiseptics.

Phytolacca is indicated in the treatment of a beginning mastitis. Use the concentration—"small doses frequently repeated."

Remember that in many a bad case of sciatica, immediate relief can be secured by injecting a solution of quinine and urea hydrochloride along the course of the nerve.

"The nitrites," says Bush, "first achieved repute in the treatment of angina pectoris." Yes, and glonoin is still the best remedy for the immediate relief of angina.

If any of your little patients are subject to attacks of vomiting with no demonstrable cause, examine the urine. You will frequently find it highly acid, and acetone will be found in it.

Do you recall Clock's remarkable paper in the *J. A. M. A.*, showing how easily summer-diarrhea in young children can be controlled with Bulgarian-bacillus cultures? He even found it unnecessary to discontinue the regular milk feedings.

For persistent colicky pains in the bowels, whether associated with constipation or occasional attacks of diarrhea, put your patient upon an emulsion of mineral oil. It often works like a charm.

Chionanthus is recommended by J. R. Herr, in *Ellingwood's Therapist*, for the treatment of diabetes. It is given in association with sodium bicarbonate and a strict diabetic diet.

Rowntree and Macht have been investigating digitalis from various sources—American, English, German. Wonder of wonders—the domestic leaves are the most active! Why should we not produce in this country all of this valuable plant that we consume?

"Every gallstone," says Moynihan, "is a tombstone erected to the evil memory of the germs that lie dead within it." By the way, have you ever tried the sodium-succinate

treatment of gallstone-disease? If not, why not do so?

Colloidal-gold injections are recommended by Longin and Camuset for the treatment of malignant measles. Worth trying, undoubtedly; but, if your patients are kept thoroughly saturated with calcium sulphide, you will not have any cases that are malignant.

An excellent protective salve to apply to the skin in order to drive mosquitoes away is one recommended by Zucker (*Berliner klin. Woch.*, Aug. 9, 1915), as follows:

Olei caryophylli.....	10.0
Adipis lanae hydrosi.....	30.0
Glyceriti amyli, q. s. ad.....	100.0

Next time you have a case of chorea try small doses of tartar emetic. My friend and colleague Doctor Zell has been trying this remedy in dogs (which are very subject to chorea), and he tells me it works like a charm. Who will do some experimental work and report results?

Chicago is proud of the fact that last year it had the lowest death rate from typhoid fever of any city of its class in the United States. There were only 5.4 deaths per 100,000 population from this disease, in this city, as compared with 5.5 in Boston, 6 in New York, 6.6 in Philadelphia, 7 in St. Louis, 7.8 in Cleveland, 12.3 in Detroit, 21.9 in Baltimore, and 24.7 in Pittsburgh.

Of course you have noted the beautiful results obtained by Pritchard in the treatment of colic in babies by the steady, everyday use of an emulsion of liquid petrolatum. This is now made so delightful that every child loves it and will take it eagerly as he would candy. Don't let the baby cry; don't resort to anodynes. Cure it with this oil.

Holt is skeptical as to the frequency of worms in children. However, Greil found intestinal parasites in 36 percent of 665 children living in and near Montgomery, Alabama. Hookworms were the most common; but 10 percent presented other parasites. Pinworms were the least frequent—only 1 percent; roundworms very common. Good old calomel and santonin will long continue to be popular.

Colic in infants—the young mother's despair! What can you do? Much—by careful regulation of food, based upon observation of the stool. Relief can be secured by means of enemas and infant's anodynes. To prevent recurrences, regulate the bowels carefully, using some palatable oil-emulsion, which lubricates the bowel from end to end, thereby alleviating the tendency to spasm.

When constipation is accompanied by

gaseous fermentation and when the stools are gray in color, Fans (*New York Medical Journal*) says that hexamethylenamine gives good results, when prescribed in association with ox-gall, aloin, and cascara sagrada. This treatment, to us, suggests the bile-salts in association with hexamethylenamine, and any other laxative which may be indicated.

Have you a case of sciatica which you want to cure as well as relieve? Then examine your patient carefully for some focal infection that may be causing all the trouble. Only today I saw a patient who secured relief when a badly ulcerated tooth was extracted. Examine the tonsils, the gall-bladder, the appendix, the prostate gland, and, if your patient is a woman, the womb and its appendages.

Atropine is one of the most frequently indicated remedies; its power of actively dilating the capillaries renders it effective whenever the blood is to be drawn away from danger points into the skin, as in all hemorrhages, chills, neuralgias, internal hyperemias and congestions, cerebral anemias, and spasm in most forms. The range is so wide one wonders why this powerful and safe remedy has never been vaunted as a panacea.

Here is a new test as to whether a woman supposed to be in labor has true birth-pains or is suffering from "false pains." Bandler (*Archives of Diagnosis*, July, 1915, p. 236) states that any woman at term who does not go into labor after a few subcutaneous doses of pituitary extract, is not at that time in labor. In applying this test, Doctor Bandler gives as a first dose one-third of an ampule of pituitary extract, hypodermically; an equal quantity is administered in another half hour, and the remainder of the ampule after a like interval.

McIves and Price (*Jour. A. M. A.*, Feb. 12, 1916) treated 81 morphine addicts—mostly denizens of the tenderloin. Twenty-one of these declared they learned the effects of the drug through its hypodermic administration to them by a physician or through a physician's prescription. *The Providence Medical Journal*, March, 1916, says that very little credence should be placed in the statements of prostitutes, crooks and thieves. "The personal experience of thousands of reputable physicians will bear out the contention that a very small proportion of drug users can truthfully ascribe their habit to dereliction of the profession, and the publication of such statistics and conclusions does the profession an injustice, while affording its enemies means for further assaults."

Leading Articles

The Arts of Peace Or the Relation of Chemistry to Industry

BY AN AMERICAN CHEMIST.

EDITORIAL NOTE.—This important article was published originally in the April 8, 1916, number of "The Lancet-Clinic." We are reproducing it with the permission of its editor, Doctor Fischer. As the readers of "Clinical Medicine" know, it is but rarely that we reproduce in these pages articles that have appeared elsewhere. When we do so, it is because we believe such article to be of very unusual interest and importance. This is the case in this instance. This paper should be read by every physician who is now thinking about "preparedness"—and by "preparedness" we do not mean preparation for war, but rather preparation for the industrial contest in which the people of this nation will be involved after the great European war now waging is brought to an end. "American Chemist" shows in this paper, more clearly than we have seen it demonstrated elsewhere, how vitally chemistry (and chemistry includes pharmacy and medicine as well) is concerned in the future life of America. The article is not a medical one, but I wish every medical man in the country might read it. The editor wishes to add that he has no interest in the manufacture of explosives.

WE hear a great deal nowadays about preparedness, that our country is not in a position to meet successfully an attack from a foreign power, that our army and navy should be built up, etc. It has even been urged that we create a standing army of at least a million men, and that our navy be increased to equal, if not excel, that of any foreign power. We are constantly reminded that Germany has prepared for the present conflict for the last forty years, and that if she had not thus followed the program of Bismarck, she would not have been able to make the great record she has in the last eighteen months.

As everyone knows, Germany has a tremendous army and during recent years has developed a great navy. If we analyze Germany's preparedness, we soon realize that she has striven under both these arms not only to build up great corps of trained men, but that she has also seen that even the largest armies and the largest navies are absolutely powerless if not supplied with necessary ammunition. An ultimate analysis of the situation shows, therefore, that the crux of preparedness consists in an ability to manufacture explosives of high quality and in tremendous quantities, and that this manufacture must be able to go on and in sufficient amount to meet all needs, even when war is actually in progress.

This being the case, let us consider what explosives are, whence they may be obtained and why they are able to do what they do.

Explosives are chemical compounds or mixtures of such, which, owing to their unstable chemical constitution, readily decompose into simpler bodies, in which process they set free enormous volumes of gases that exert tremendous pressure.

The Chemistry of Explosives

The essential element in all explosives is nitrogen. Generally speaking, an explosive body of more or less potency is formed whenever the chemical group NO_2 is introduced into any organic compound. The process is called "nitrating." When such nitrated organic compounds are ignited or detonated, the oxygen of the NO_2 group combines with the carbon atom of the organic body to which it was joined and nitrogen and oxygen is broken and the oxygen rushes over to unite with the carbon atom.

Petroleum bodies or paraffins are of such nature that they can not be nitrated directly in order to produce explosives. About six months ago, Rittman, a government employee, demonstrated that benzol and toluol could be made from petroleum. The newspapers immediately announced that now, through the Rittman process, a way had been found to make unlimited quantities of dyes and explosives. It is true that Rittman did succeed in making benzol and toluol by heating petroleum vapors under pressure and thereby breaking up the paraffins into aromatic compounds, but to the present date the process remains of purely laboratory and not

practical interest. Whether the process can be developed to fulfill the predictions made for it, remains to be seen.

Nitrogen is in itself the most inert of chemical elements, but when, through the expenditure of great energy, it is united to some other element and introduced into a molecule, this same energy is again set free when the element with which it was originally united is given a chance to combine with some other element. Nitrogen, as it were, wants to live alone. The celebrated chemist Berzelius once said that nitrogen is best recognized by the properties which it does not possess.

Nitrogen and carbon, therefore, represent the essential constituents of explosives. But unlike most commodities, they can not be stored in large quantities, for the risk is too great. Even if storehouses for them could be provided, they would have to be built miles from any city or town. Their location would then be inconvenient in days of need. The only practical way out of the difficulty resides in the possibilities of being able to manufacture explosives in amounts equal to the rate of daily consumption, even when war is in progress.

Why Making Explosives is Linked with Dyestuff Industry in Germany

In trying to meet this need, Germany realized that explosive works could not be built merely to stand idle during times of peace, for every factory, when idle, deteriorates rapidly. The question, therefore, resolved itself into the feasibility of encouraging industries manufacturing products for which there is a steady demand in times of peace, but which in times of war could have their equipment converted into explosive factories.

Germany possesses a system by which she obtains at all times expert advice from men who have distinguished themselves in their chosen line of endeavor. These are appointed as her "Geheimräthe," that is to say, her privy-councilors, or secret advisors. The German government does not embark upon any new project before it has had the advice of these men, whose opinions are based upon a thorough and scientific investigation of the matter in hand. It is this method that has made her the most efficient nation in the world.

The dyestuff and the pharmaceutical industries—especially the former—were decided upon by these men as lending themselves most readily to the manufacture of explosives. The German government therefore made it a

point to foster and encourage them. As a result of this care, the dye industry of Germany has become one of its most profitable ones. It produced before the war 80 percent of the world's output in dyes, and declared dividends averaging 24 percent per year. The United States consumes only some 10 percent of Germany's output.

A sketch of the history of this industry gives an idea of its rapid growth, its influence upon commerce, and its value.

History of the Dye Industry

The modern dye industry started when W. H. Perkin, an Englishman, obtained on August 20, 1858, a patent for the production of a dyestuff known as "Perkin's mauve," from anilin. The actual production of this dye was started in France, the French making use of the information contained in Perkin's patent specifications. Its manufacture soon spread to the industrial centers of all the world and many patents were obtained in different countries. Few of these proved commercially successful.

The production of mauve from anilin stimulated great activity in chemical research, so that soon many other dyes were produced from this substance. Zinin's discovery that anilin could be synthesized from benzol (a process still followed to this day) made possible the production of anilin dyes commercially and in large quantities.

In 1859, Hofmann discovered magenta, so named because in that year the Battle of Magenta was fought. Hofmann did more, perhaps, than any other chemist to investigate the nature of dyestuffs and to determine their chemical composition. Due to his efforts primarily, England became the foremost country in the production of dyes.

In 1862, when the whole dye industry was still in infancy, Hofmann wrote: "Instead of disbursing her annual millions for these substances (dyes), England will, beyond question, at no distant day, become herself the greatest color-producing country in the world; nay, by the very strangest of revolutions, she may ere long send her coal-derived blues to indigo-growing India, her distilled crimson to cochineal-producing Mexico, and her fossil substitutes for quercitron and safflower to China, Japan and the other countries whence these articles are now derived." Hofmann's forecast came true only in part. England had vast coal fields at her disposal and her metallurgical industries were becoming more important every day. Large quantities of coke were needed, and when it

was found that the by-products of coal distillation could be worked up for dyestuffs and therefore had value, a great impetus was given to tar distillation. Through the combination, England soon outrivaled all other countries industrially. The tar distillation industry in England thrived and its output rose to be valued in the millions.

In the meantime, German industry was looking askance at the progress England was making. The German mind is particularly fitted for chemical research, as infinite patience and the faculty of minute and careful observation are necessary to carry on successfully this kind of work. Such men as Caro Graebe, Lieberman, Mischler, and Griess, through their brilliant work, gave the dyestuff industry in Germany an impetus which placed it in the foremost rank of scientific achievement.

During the early seventies, Alfred Nobel, Swedish engineer, devoted his time to the study of explosives. Many facts regarding the explosive-mixtures and detonators were known, but it remained for this able man to put the manufacture of explosives on a scientific footing. He was attracted to the work by observations he had made on the tremendous force that could be generated through the use of certain chemical bodies. It had previously proved exceedingly dangerous to use and to store large quantities of explosive chemicals, as it was not known when these substances would go off or what were the causes determining this. Study of the action of these bodies promised much fruit. It became the aim to stabilize their action and control their explosive force. Research soon showed that a number of substances which are the products of the distillation of coal and which were used in the dyestuff industries, served well in this connection. Bismarck, who was very fond of the company of scientific men, learned to his delight (from these friends) the value of tar distillation products for the manufacture of ammunition. Having a far-seeing mind, it did not take him long to recognize that the nation having the ability to manufacture large quantities of high-power explosives of greater force than could be manufactured by other nations, would have a tremendous advantage in times of war.

As is well known, the German universities are supported in great measure by the government, and as the dyestuff industry is an eminently scientific one, an intimate connection between these industries and the universities soon arose. It became the aim of

the German government to foster the dyestuff industries to the point where, in case of war, they could be converted into explosive factories large enough to take care of whatever demands a great war might create.

Let me emphasize again this enormous advantage to Germany, in fact, the necessity for her very existence, of harboring within her borders an industry which used the same raw products as an explosive industry, and of building this up to the utmost.

Building Up Foreign Trade

The consumption of dyestuffs in Germany proper is small, and owing to her size she could from the start never hope to become a large consumer herself. It was therefore necessary to build up a large foreign trade. To bring this about, special concessions in freight rates for export were granted and taxes were even remitted in order to help the general development. The spirit of scientific research was encouraged and special pensions for those men who had devoted a certain number of years to research were provided for. This made it possible to employ research chemists at exceedingly low salaries. Such advantages, with many others, helped Germany to develop her chemical industries beyond those of any other nation. It was soon found that, owing to the increased output of the chemical plants resulting from this encouragement, Germany was able to manufacture more cheaply than other nations, and, that she was also able to produce products of higher quality than those made in other countries.

Government Cooperation

Manufacturers who use chemicals and dyestuffs must buy in the cheapest market, or they can not meet competition. Foreign nations soon found it was difficult for them to compete with Germany, and many an industry which was started in the United States was put out of business because of being undersold by German products. It was the combination of expert chemical skill, favorable conditions under which they could manufacture, the genius of expert business management and the minute study of detail that helped the Germans to work up a tremendous chemical trade and especially in dyestuffs. The existence of trade conventions, known as Kartels, are of inestimable value in building up an industry. The Kartels recognize that competition carried to the extreme is the death of trade and not its life, as our government would have us believe. In

Germany, therefore, it is legal to limit competition, to have price agreements and to pool profits. In other words, the entire German dyestuff trade acts like a single corporation and can fight to better advantage any number of individual companies acting independently, for independently our companies must act or else they are guilty of illegal practice and subject to punishment. Our laws in this respect, although presumably made to favor United States citizens, really work to their detriment.

The Chemical Industry in America

The United States at one time held ten dyestuff factories. In 1883, the duty of fifty cents per pound on dyes was removed and there was substituted for it an *ad valorem* duty of 30 percent (which still exists). In spite of this 30 percent protection, all the dyestuff plants, with three exceptions, perished. These three had a hard time. One of them was started in Buffalo, in 1879, by a very wealthy man. For sixteen years, fresh capital was poured into it and not one cent of profit was taken out. Then a small percentage was paid on the money invested, but, even up to date, the company has not realized a yearly yield of 6 percent on its investment since the commencement of business.

Another company has been in existence since 1882, but has never made money until this war broke out. This company manufactures ultramarine, the profits from which have enabled it to stay in business.

The third company could not stand the strain of German competition and sold out to a German firm in 1899, since which time it manufactures a few colors and uses its buildings as storehouses.

Nearly all dyestuffs of commercial importance were invented by Germans. The patent concession gave them a monopoly upon their inventions for fourteen years. The prices permitted to be charged for these patented dyes were so arranged that during the life of the patent the profits realized would repay the price paid for the original plant. At the expiration of a patent a plant costing at times as much as one million dollars would then be placed on the books as valued at one mark. Let me cite a concrete example. Auramine, a yellow dyestuff of great beauty and strength, sold at an average price of \$4.48 during the life of the patent. When the patent expired, the price in the United States became 48 cents, and any one who cared to manufacture it was free to do so.

Did any one in the United States take it up?

No, decidedly not. The American manufacturer would have been compelled to build a plant costing perhaps a million dollars. This would have meant an overhead expense on the plant of one hundred thousand dollars. The manufacturer would have been further handicapped by his lack of experience (which the German firm gathered in working the process fourteen years) and the chances are that it would take him several years before he would have been able to get the same great yields, or equally good ones, as compared with the German. The price of forty-eight cents was fixed upon by the Germans because they knew that there was no chance at this figure for the American to compete successfully in the manufacture of the product.

It was the usual habit of German dyestuff manufacturers, when they saw that a dyestuff was made successfully in the United States, to undersell in our market, when necessary, even at prices below the cost of production, and to continue doing this until the American manufacturer was forced to discontinue. As soon as he was out of the market, the price would be raised, even to above that which originally ruled. What took place in the United States took place in other countries as well. The German government has thus, through the dyestuff manufacturers, pursued a relentless fight against other nations in their building up of a dye industry.

The activity of German dyestuff manufacturers has been so thorough that they induced certain of our own manufacturers, who needed dyes in their business, to exert their influence to keep the tariff as low as possible. The foreign manufacturers maintained that dyestuffs should be considered raw material, and that it was therefore to our own manufacturers' interest to keep the tariff low. Most of the latter accepted this narrow-sighted policy and did not wake up to the results of their action until the war broke out and they were cut off from their usual sources of supply. With the beginning of the war, a million American workmen were thrown out of employment, for this number is employed in industries to which a continuous dyestuff supply is absolutely essential.

From what I have said you will understand the German government's interest in the development of huge dyestuff works.

Importance of Benzol and Toluol

Now, let us see what happened when the war broke out.

A general order was given in Germany that all dyestuff production should be discontinued

at once and that the factories formerly interested in this should immediately follow the program which had been mapped out years ago, whereby every vat, every tank and kettle was to be rearranged, according to predetermined plans, and the manufacture of certain explosives commenced. A comprehensive plan for all this had been worked out in peace times, and so it was known to the pound just how much of the different explosives could be made in every factory that had previously made dyes. Moreover, all these factories had, of course, large supplies of crude material on hand—just as every factory doing a large business must have—all of which could now be worked up into some form of explosive. It is readily seen what a tremendous advantage Germany had in this ability to convert, at almost a moment's notice, great plants into explosive factories capable of large output.

Benzol and toluol are the chief raw products of the explosive industry and are derived solely from the distillation of coal. The German dyestuff manufacturers have agreements with the coke-oven men for these supplies and the government determines the quantity of benzol and toluol which is to be carried in stock, its method of storage and its location. If the coke-oven men do not live up to their contracts the government steps in (through its general staff) and sees that they do. It also controls the output, and in times of war requisitions the ovens and determines for what purposes benzol and toluol may be used.

These two products constitute perhaps the best needed for the manufacture of explosives, but other raw products are also of great importance. Almost any organic body containing a hydrogen atom or atoms which may be replaced by the nitro-group can be converted into an explosive. Glycerin, starch, certain types of sugar, cotton and many other substances may be used in this way. To be of value as raw material for the manufacture of explosives, almost unlimited quantities must be available. Glycerin and cotton, in ordinary times, answer this requirement, but since the war both have been declared contraband, with the result that they have become scarce in Germany. Glycerin has been used for years for the manufacture of nitroglycerin, but cotton has come into use only recently for the manufacture of nitrocellulose, a very powerful explosive.

Why Wood-Pulp Has Advanced

England always declared in favor of and insisted upon cotton being considered non-

contraband, but she has changed her mind since the present conflict started and has insisted since that it should no longer be classed as noncontraband. This change of attitude has been severely criticized, but in passing judgment we must not forget that conditions have changed and that cotton is now a raw product which may be used for the manufacture of explosives. Germany recently made a proposal to the United States to send over a cargo of dyestuffs in return for a cargo of cotton. As England, through her fleet, has command of the seas, her consent to this was necessary. Diplomatic negotiations failed to bring it. Germany, however, was not greatly disturbed when the negotiations fell through. For some time past, German chemists, at the instigation of the general staff, have worked on substitutes for cotton and have discovered in wood-pulp a product which, while not as good as nitrated cotton, still gives very satisfactory results. The available supply of wood-pulp in Germany has been requisitioned, and an order has been given to limit the size of all newspapers. An old newspaper has to be returned before a new one is issued. The price of wood-pulp has risen since this order, and, in all probability wood-pulp will shortly be declared contraband.

Glycerin is another product which, on account of its use in explosives, has become very scarce and expensive. The ruling price before the war was in the neighborhood of twelve cents per pound; now it is fifty-two cents a pound, and there is very little obtainable at this price.

The Invaluable Nitrogen

Germany has also always striven to bring about conditions within her own confines which would enable her to have available at any time all the raw materials needed for explosives. As I have pointed out, nitrogen compounds are the basis of all explosives, and it is absolutely essential that unlimited supplies of nitrogen compounds be available. Germany met this problem by perfecting methods of obtaining nitrogen products from the nitrogen contained in the air. This work was also suggested and developed through the general staff.

Formerly Chili saltpeter was the basis of all nitrogen compounds, and as this salt could be obtained only from Chili, Germany realized the absolute importance of her becoming independent of all other nations in this essential product, without which she could not conduct a war of any duration. •

To obtain nitrogen products from air, a source of cheap electric energy is essential. On looking over the ground, Germany found that the cheapest sources of electric energy lay in the waterfalls of Norway. She established in consequence large industries for making nitrogen products there and then shipped these products to Germany. After the war began, Germany realized that it would be impossible for her to obtain the nitrogen products which she was making in Norway, in consequence of which she immediately started six plants on the Rhine. Here coal is coked and the distillates are used for making explosives, while the gas produced in the process of coking is used in gas engines, which in turn, are coupled to huge generators for making the electricity required for the manufacture of the nitrogen compounds necessary for the explosives out of the nitrogen in the air. At one stroke, therefore, she obtains not only her distillates, such as benzol and toluol, but also the nitric acid which is used for nitrating these products to make the smokeless powder, the nitro-toluol, etc., which constitute the modern sinews of war.

When the army of occupation entered Belgium, over one hundred experienced coke-oven men were taken along to operate the coke ovens of the captured country, so that the benzol and toluol obtained as by-products from these could be properly made and sent to Germany for the manufacture there of explosives. Solvay, the Belgian, who perhaps has done more than any other one man to discover methods for the recovery of the by-products of coal distillates, was seized by the Germans and held as a hostage.

From what I have said, you will see that the preparedness program of Germany is a comprehensive one. It may perhaps teach us also how important, if not absolutely essential, is the development of chemical

industries in the United States if she is ever to be prepared to meet a foreign foe.

Germany with her large guns capable of throwing a projectile twenty-six miles would be powerless before an enemy if these guns were without the propelling power which is supplied by means of explosives. As a *sine qua non* of preparedness alone, were there no other reasons for it, the United States should begin to develop her chemical industries. How she can best do this will require much thought and study. Our chemical industries, which have never amounted to much until this war, need to be encouraged and the government must in some way devise means for the production of all the explosives that may be necessary within her own boundaries. The training of men for the army and navy is but the smallest part of a program of preparedness. The building up of a chemical industry which can supply the wants of an army and navy in case of war is a far more difficult one.

Germany has, at the present time, over four hundred million dollars invested in her dyestuff industries. In the United States about three millions were thus invested before the war. These and similar facts make it easy to see that unless the government lends a hand it will be impossible for the United States dyestuff industries, with their three millions of capital, to compete with the four hundred millions of Germany. Years of experience have, moreover, given German manufacturers a tremendous advantage over us. It will take much ingenuity and more hard work on our part to equal their outputs in quantity, quality, or price. The matter of differences between wages in Germany and in the United States will not be the great item, but the other things of which I have written will.

If preparedness is to be taken seriously, the United States needs to study the subject from angles which she has thus far ignored.

Puerperal Eclampsia

III. The Treatment of Eclamptic Convulsions

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

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[Continued from page 412, May issue.]

TWENTY-FIVE years ago, the treatment of puerperal eclampsia was as unsatisfactory as that of the albuminuria which led up to that condition, and despite

all our measures the albuminuria of the pregnant woman too often resulted in eclampsia, and then, no matter what our treatment, the eclampsia too often ended in the death of the victim. Although many remedies had

been suggested, medical men were filled with a feeling of helplessness when confronted by this calamity.

Forty years ago, in one of the worst cases of postpartum convulsions I have ever seen, seventeen convulsive seizures occurred in the twenty-four hours following delivery. The doctor, one of the best of that day, did little in the way of treatment, except trying to prevent the woman from injuring herself. The patient recovered and is alive today; however, many of the victims were not so fortunate.

The pessimism with which this subject naturally was regarded by the profession has not altogether disappeared in our day. Less than five years ago I heard a teacher of obstetrics assert that in the face of puerperal eclampsia we are practically helpless. This attitude, however, is no longer justified in view of the gratifying results that are being attained by presentday rational treatment. An intelligent trial of the veratrum treatment, such as will be outlined further on, will, I believe, convince any fair-minded man of its very great value. True, I have heard obstetricians declare that they had tried this treatment and it had failed, but close inquiry in every instance disclosed the fact that the cause of failure lay in the dosage and the method. Similarly, the results in the first two cases in which I used veratrum were not satisfactory for the very same reason. The secret of success lies, first, in administering very large dosage of the drug, and secondly, in following strictly the precautionary rules laid down for guarding against veratrum-poisoning.

Some of the Methods of Treatment in Vogue

It may be of interest to consider briefly the principal methods of treating puerperal convulsions that thus far have been employed; namely: active catharsis with some quickly acting drug, such as croton-oil; rectal administration of bromides or chloral hydrate; hypodermic injections of morphine, also of pilocarpine; inhalation of chloroform; blood-letting; forced delivery; and, lastly, the hypodermic use of veratrum viride. While it may be admitted that all of these are based on more or less rational grounds, they differ greatly in effectiveness, and, moreover, some of them are fraught with danger.

As to croton-oil, its use produces results that are good, so far as they go; but its value is too limited for a condition so serious as eclampsia. As an adjuvant to other treatment, it has a certain value.

The same may be said of enemas of bromides or of chloral. The sedative effect of these two drugs is desirable; if given in sufficiently large doses, however, they are so irritating to the rectum that they are expelled before absorption can take place.

A single hypodermic injection of morphine in moderate dose is permissible at first, for its sedative effect, until other measures can be instituted. It reduces the arterial pressure, and to that extent is helpful; but it is generally regarded as doing harm by its narcotic properties if given in larger amounts. A small dose of hyoscine, morphine and cac-toid is, in my opinion, preferable to morphine alone.

Pilocarpine has been highly praised by some writers, and as vigorously denounced by others; to a certain degree, both sides are right. It is valuable, but dangerous; and its dangerous effects are less controllable than those produced by veratrum. Before I had learned the value of veratrum, pilocarpine was my mainstay in combating eclampsia, but I spent many an anxious hour watching my patients under its influence. The diaphoresis produced by it is very marked, and the bubbling râles in the lungs give evidence of internal diaphoresis besides the external, and suggest the danger of drowning the patient in her own secretions.

Administering chloroform by inhalation during an eclamptic seizure is very generally practiced, but I have always felt that this expedient is accorded more credit than the facts warrant. Indeed, I think its chief value consists in impressing those who are present.

Let us look at the facts for a moment. A patient is seized with a convulsion. A chloroform-mask is placed over her face, and in a few minutes the attack begins to subside. Naturally, the chloroform is credited with having stopped the fit. But, has it really done so? The seizures are self-limited, rarely lasting longer than three minutes, when they stop, whether chloroform was given or not.

When we consider that, under favorable conditions, it takes from fifteen to twenty minutes to bring a patient under chloroform-narcosis, it is pertinent to inquire how much chloroform she will take into her system inside of three minutes, and when respiration is as nearly suspended as it is during an eclamptic seizure. If it were possible to foretell when an attack is going to take place, then possibly we might forestall it by means of chloroform; but, after the patient has come out of one seizure, we have no means of

knowing whether the next one will occur in ten minutes or in two hours, or whether there will occur another convulsion at all. So, the prophylactic use of chloroform is not practicable, while, as a means of stopping a seizure, I cannot say that I ever have seen it do any good.

For all that, I do not believe that the chloroform does any harm if given with reasonable care, and, therefore, feel that resort to it is justifiable by reason of the effect upon the bystanders as suggested above. Nor do I consider this to be quackery. The sight of a person in convulsions is so terrifying that laymen are unconvinced when told that little can be done during an attack beyond preventing the patient from injuring herself. When people see chloroform administered and then in a few minutes see the attack pass away, they feel that the doctor is doing something. The point I wish to make is, that the doctor himself should have no illusions upon the subject, and should realize that his effective work must be done between the attacks by other means.

Bloodletting has often been suggested, and occasionally practiced, with the idea of preventing the recurrence of the spasms. Theoretically, this would seem rational, as it causes reduction of the blood-pressure; and this is one of the things which it is desirable to accomplish. But bloodletting is no longer popular as a remedy for anything, and, possibly, for good reasons. It is a question whether depriving a patient of a large amount of blood in a great crisis may not have drawbacks that outweigh any temporary benefit. There seems to be no doubt that the preponderance of opinion at present is, that diluting the blood with physiologic salt solution is more useful in controlling the spasms than is the removal of part of the blood.

The Veratrum Treatment

For the past eighteen or twenty years, I have found veratrum viride so satisfactory in combating eclampsia that I have come to depend upon it almost entirely. So greatly, however, does success depend upon the manner in which this drug is employed, that a careful observation of certain strict rules of procedure is absolutely imperative. To attempt to force results in eclampsia by means of this powerful remedy without such rules clearly outlined in one's mind, would be as reckless as to undertake a laparotomy without possessing a thorough knowledge of anatomy.

I am not asserting that the method which I am about to describe is perfect; it may be capable of improvement, and I shall cordially welcome any suggestions in that direction. My method is an evolution, the product, to some extent, of lessons learned from unfortunate errors and failures, while for some of its features I am indebted to a report of 38 cases, as published about a dozen years ago, by Dr. Laphorn Smith, of Montreal.

And these are the main points to be observed: (1) Very large doses; (2) hypodermic administration only; (3) recording the pulse every ten minutes. Let me consider these in the order named.

The Proper Dosage of Veratrum Viride

The dosage should be large enough to bring the patient thoroughly under the influence of the drug within one hour, but, yet, not so large as to produce veratrum poisoning. Too little of it means failure, while too much may prove disastrous. The difficulty of regulating the dosage is enhanced by the variation in strength of the common tincture of veratrum viride as sold in the drugstores. For this reason, I have for years carried in my obstetric bag a small bottle of Norwood's tincture. This preparation I have always found uniform in strength; but the doctor must be warned that it is five or six times as strong as the ordinary U. S. P. tincture and, hence, has to be used with care. The alkaloid veratrine would be ideal, so far as uniformity is concerned, but whether it would give the same results as the tincture in controlling the convulsions I do not know, never having used it. If any of your readers have had experience in this direction, I certainly should be glad to hear from them.

[Many readers of CLINICAL MEDICINE have reported experience with veratrine in eclampsia, and those who use it are enthusiastic advocates of this alkaloid.—Ed.]

I am in the habit of giving 5 minims or 10 drops of Norwood's tincture for the initial dose, and repeating this every half hour or every hour, according to the frequency of the eclamptic seizures, until the pulse comes down to 60 per minute or the attacks cease.

The uncertain strength of the ordinary tincture was illustrated in a case I saw three years ago. The doctor in charge had given 15 minims of the U. S. P. tincture, and when I saw the patient two hours later, her pulse was down to below 30, with the other symptoms of overdosage in proportion. We had

rather an anxious night of it, although we did bring her out all right. It is possible, of course, that idiosyncrasy also played some part in this instance. It is a wise precaution, therefore, not to make the initial dose too large, rather depending upon repetition at shorter intervals for results. By watching the pulse very closely, the danger of overdosing can be guarded against.

Next: administration of veratrum viride by mouth, when given for eclampsia, should not be considered for one moment. Absorption from the digestive tract is too uncertain to be depended upon in giving a drug of such potency; while, when injected hypodermically, we can be reasonably sure that the rate of absorption will be fairly uniform. Experiment shows that, when used in this way, most drugs reach their maximum effect in about thirty or thirty-five minutes; but we must always bear in mind that the *maximum* effect of a drug is not the same thing as the *total* effect, for, a gradually decreasing absorption is going on for some time after the maximum has been reached. For this reason, if we give a second dose thirty minutes after the first one, we may get a greater effect than we want, unless we keep the above fact in mind. Unless the convulsions are recurring very frequently, it is better to allow an hour to elapse before repeating the dose. Of course, if the con-

vulsions do not recur, then the dose need not be repeated.

When a patient has had too much veratrum, the two most striking symptoms are, the great depression of the pulse and the extraordinary secretion of gastric mucus. In the only two cases of this kind that have come under my observation, the patients vomited almost continuously for two hours, bringing up easily enormous quantities of perfectly clear odorless mucus.

Thirdly: The administration of physiologic salt solution, either subcutaneously, by rectum or intravenously, is regarded by some as a valuable aid in controlling eclampsia. I am not certain as to its value.

Where the convulsions occur during labor, they usually cease with delivery, and this has led some obstetricians to advocate forced delivery in practically every case, even in those where labor has not begun. In my opinion, forced delivery should be resorted to conservatively. If labor is in progress, it is justifiable to aid dilatation or even to employ the forceps, to shorten the labor, provided that these means be used with sufficient moderation to avoid injury. If, however, convulsions occur before labor has set in, forced delivery should not be considered until it has become certain that they cannot be controlled with veratrum viride.

[To be continued.]

The Treatment of Syphilis

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AMONG the many diseases with which we have to do, syphilis probably stands first in importance with regard to drug-treatment. It is one of the few diseases for which we have a specific remedy, hence, is one of the few drug-curable afflictions.

But, possessing and administering the specific drug does not necessarily nor always mean a cure. The good results depend on the proper use of the remedy.

The treatment of syphilis, therefore, resolves itself into two classes; namely: the periodic symptom-relieving, nonmethodic, noncurative treatment; and the persistent, scientific curative administration of the specific or specifics.

The drugs of major importance and considered curative in effect are: mercury, potassium iodide, and salvarsan. Of minor

importance and used as aids to the major drugs, are: stillingia, echinacea, phytolacca, xanthoxylin, iron, sodium cacodylate, and a few others.

Vigorous systematic treatment should begin as soon as the diagnosis is made. In a large percentage of cases, the diagnosis can be made from the appearance of the primary lesion, together with the history. When in doubt, on account of vague history and unusual appearance of the lesion, a search should be made for the *spirochaeta pallida*, the discovery of which in the lesion makes the diagnosis a certainty.

A quick and genuine cure usually depends on prompt and vigorous medication before the spirochetes have entrenched themselves in tissues not permeated by the drug or drugs, as our present methods depend more

on the destructive power of remedies, than on the production of antibodies.

Ten years ago, it was taught that treatment should not begin till the appearance of secondary manifestations. By this delay, the spirochetes are deeply imbedded, and protection walls about groups of organisms make the chance of cure less with each day of delay.

The Dosage of Salvarsan

Take a case of syphilis of recent acquisition, no contraindication being present. Give 0.6 Gram of salvarsan intravenously; repeat the same dose at intervals of six to ten days till five or six doses have been given, then give hypodermics of salicylate of mercury, in increasing doses, twice a week for a period of three months. Stop treatment for eight weeks, then have a Wassermann test made. If positive, repeat the same course; if negative, have a Wassermann test made at intervals of three months, till negative reactions have continued for a period of one year.

Employ the same series of salvarsan injections for infections of longer standing, with the difference that the administration of salvarsan should be preceded by a thorough course of mercury. In recent infections, one such course is usually sufficient. The older the infection, the more courses are required.

Salvarsan exerts its influence by actual contact with the spirochete, and, if a sufficient amount of it comes in contact with every spirillum in the body, then all are killed and the patient is free of luetic infection.

Ehrlich's original idea was, completely to sterilize the patient with one dose; but this proved to be practically impossible in most instances, hence, the administration of one dose is probably worse for the patient than giving none at all. The single dose kills a large number of the spirochetes and cripples the natural tendency of the body-cells to produce antibodies, hence, the spirochetes escaping create havoc in the body, because of lack of antibodies.

Thus we see the necessity for repeating salvarsan injections at short intervals, till there is a likelihood that the spirochetes have all been destroyed, using mercury afterward, to insure destruction of the few that might escape by reason of being imbedded deeply in some resisting tissue and not being reached by the salvarsan.

Technic of Intravenous Administration

It is generally considered by most authorities that the intravenous administration of

salvarsan is preferable to any other. It insures a more rapid and thorough effect, quick elimination, and is much less painful and disagreeable to the patient.

Dangerous and disagreeable reactions are usually due to faulty technic. It is important that only freshly distilled water be used, slightly alkaline in reaction, and about at body-temperature. The arm is prepared with the usual aseptic technic; the tourniquet is applied above the elbow, bringing the median basilic vein into prominence. Then, with the warm physiologic salt solution in the container and running through the needle, insert the needle into the vein, removing the tourniquet as the needle is inserted. A steady flow of the salt solution established and no local swelling produced shows the needle to be in the lumen of the vein. Then the salvarsan solution, previously prepared, is added to the salt solution already in the container. Generally 150 Cc. of salt solution to 0.6 Gram of salvarsan is sufficient, and, if the needle clearly is in the lumen of the vein and there is no leakage and a slow, even flow, 10 to 20 Cc. of solution is sufficient.

Some of the Accidents

Common accidents and reactions following the administration of salvarsan are:

First: The reaction caused by the organisms contained in old distilled water. The dead organisms and toxins introduced into the blood with the salvarsan produce a chemical compound highly poisonous. The result is, an elevation of temperature, chills, vomiting, headache, and sometimes death; also, arsenical poisoning, because of the breaking up of the drug by the water composition.

Second: The so-called Herxheimer reaction, occurring in two to four days after administration, consists of swelling and consequent pressure effects in locations where the spirochetes exist in great numbers. When it occurs in nerve-centers or parts where nerves pass through a bony foramen, temporary paralysis and neuralgic pains are the result.

Third: Neurorecidive, occurring several weeks or months after the injection—supposed to be due to increased activity in existing lesions or lighting up of new lesions.

Fourth: A thrombus may be dislodged and do its characteristic damage.

Fifth: Admission of air into the vein and perhaps interference with the closure of a cardiac valve, with death resulting.

Sixth: Local swelling, inflammation and sloughing of tissues from allowing some of

the drug to escape into the tissues surrounding the vein. It is guarded against by allowing the salt solution to flow before placing the drug solution into the container.

Contraindications

There are certain general contraindications to the use of salvarsan; namely: heart-disease, nephritis, and brain syphilis. It may be used when these conditions are present, but the danger should be appreciated and extra precautions taken to guard against possible death.

Conditions in which salvarsan is especially indicated: (1) Abortive treatment, early. (2) Cases that show idiosyncrasy to mercury. (3) Cases upon which mercury has but little effect. (4) Positive Wassermann reaction after the long-continued use of mercury. (5) Local lesions, which make the patient a menace to his associates. (6) Malignant syphilis—prompt and full dose.

Neosalvarsan is less irritating, more convenient to use, and calls for a more simple technic, but it has been proved to be much less destructive to the spirochetes than is salvarsan. Also it is probably more toxic and more liable to be followed by accident.

Parasyphilitic Conditions

In the so-called parasyphilitic conditions, such as locomotor ataxia and paresis, it has been proven that the cells of the cerebro-spinal meninges have no selective action for salvarsan, and, hence it exerts no effect on the central nervous involvements when injected into the blood stream. Swift and Ellis, of New York, have instituted a method of intradural administration of salvarsanized serum.

Salvarsan is given intravenously in the

usual manner, and after a time varying from a few minutes to one hour, blood is withdrawn from the vein, kept in a low temperature for a few hours, and the serum separated. Of this serum, 12 Cc. is mixed with 18 Cc. of salt solution; this is sterilized and, at body-temperature, is injected into the spinal canal, after drawing off a like amount of spinal fluid. Brilliant results have been reported from this treatment, but the full value of the method has not yet been definitely determined.

Potassium iodide has no specific action on the spirochetes, but is extremely useful in breaking down cellular deposits and eliminating toxins from the body. Its administration at suitable periods in the treatment of syphilis opens the way for the specific action of mercury or salvarsan and clears the system of collected poisons.

The development of tuberculosis is a factor to be guarded against in the treatment of lues, and it behooves us to keep strict account of the action of the various organs and the general cellular condition of the body. As aids in maintaining the general bodily health, we call to our assistance the before-mentioned accessory antisyphilitic drugs: stillingia, xanthoxilin, phytolacca, and iron. The triple arsenates of iron, quinine and strychnine with nuclein, are very valuable. Do not neglect general hygienic measures, as baths, fresh air, and plenty of good food, ever keeping in mind that the destruction of the spirochete must not be accompanied by devitalization of the body of the patient.

[In connection with this paper, read also Doctor Neiman's article, page 407 last issue; also the papers by Dr. G. Frank Lydston, published in *CLINICAL MEDICINE* in our issues of January, February and March, 1914.—Ed.]

Dilatation of the Anal Sphincters

By CHARLES J. DRUECK, M. D., Chicago, Illinois

WHEN thinking of preparing this paper, I had misgivings about my taking up the readers' time with a rather trivial procedure; however, in looking through the textbooks on surgery and even those especially devoted to rectal diseases, I find only the briefest mention of this subject, or even none at all, while, further, I know that many otherwise well-informed general practitioners are uncertain as to the best method of going about it.

Divulsion of the sphincters, literally interpreted, means, to tear or rend asunder—and that is what usually occurs when the patient is chloroformed and the muscles are stretched by thrusting the thumbs through the anal sphincter and dragging them sideways until they touch the ischial tuberosities. But such brutal traumatism is seldom necessary nowadays. What we wish to accomplish in the majority of instances is, simply to overcome the natural or the exaggerated

contractility of the sphincter, so that we may open the anus sufficiently for examination or operation. If this can be accomplished without inducing general anesthesia, it brings within the scope of office and ambulant treatments many cases that formerly were attended to only in the hospital.

It is my object to outline here a plan of treatment that in my hands has yielded thoroughly satisfactory results in properly selected cases, one which obviates the dangers of chloroform without adding any disadvantages or complications. As this method is applicable both to examination and treatment, I offer it as having a well-defined field.

What We Accomplish by Divulsion

Stretching the sphincters forms an important step in the treatment of most rectal diseases, because it produces certain anatomical changes and definite physiological results. Stretching the muscle also stretches the fine nerve-filaments in its substance and produces a paralysis of these fine twigs. The action is the same as is produced when stretching the sciatic nerve. Localized inflammatory products are broken up and as a result sphincteric spasm, pruritus, and hypersensitiveness are mechanically relieved. In many instances, pent-up secretions are thus provided free drainage.

If this traumatism is limited to the nerve-branches in and about the sphincter, the regeneration of the nerve soon occurs and the paralysis is only temporary. If, however, the larger nerve-trunks out toward the ischial fossa are injured, regeneration is more remote and it is possible for cicatrization and atrophy to occur in the muscle before new nerve-tissue is built up, so that paralysis more or less permanent will result as a consequence.

The Preliminary Examination

Every thorough examination of the rectum includes a digital exploration, and thus the introduction of the fingers puts the sphincters on sufficient tension to disclose many important conditions. The finger, thoroughly anointed with vaseline or olive-oil (not glycerin, because that stimulates the bowel to evacuation), is gently insinuated, with a boring motion (remembering the direction of the rectum), forward toward the pubes until the sphincters are passed and then backward toward the sacrum. As we know, when the finger touches the sphincter, the latter contracts spasmodically. If however, the finger is thereupon held firmly in position

for a minute, the muscle again relaxes, when frequently the finger may be pushed in without difficulty. The sphincter now is slightly stretched, and the degree of contraction, or "bite," informs us of the tonus or irritability of the muscle.

This digital stretching is always essential in every new case before making the specular examination, because it not only demonstrates the condition of the muscle itself, but also discloses many diseased conditions that may be present, and thereby often enables the operator subsequently to dilate the sphincter instrumentally without causing much pain.

In newborn infants, stretching the sphincter with the obstetrician's little finger is one of the most powerful respiratory stimulants, while many times in older children the introduction of the syringe-tip acts as a sufficient stimulus to bring on defecation without giving an enema at all.

If in a given case the finger has been introduced and the sphincter and the rectum are found normally patulous, the anoscope or a speculum may be slowly introduced without causing pain and the lower rectum be dilated enough for examination or treatment. If, however, certain diseased conditions exist which have caused an irritable and hypersensitive sphincter, the muscles will be found to "bite" the finger abnormally, and then the anus needs preliminary preparation.

Producing Local Anesthesia

To overcome these conditions temporarily, we have recourse to local anesthesia, a condition that may be produced by a number of methods. Cocaine in weak solution may be used with perfect safety, provided the total amount of the drug used at any one sitting is less than 1-2 grain. By placing the hands on either buttock, the finger-tips resting close to the anus, the external sphincter may be gradually drawn open (everted) until half an inch of the mucous membrane rolls out. This surface is then sprayed with a 4-percent cocaine-solution to which has been added 1-2 percent of a 1 : 1000 adrenalin-solution. After the buttocks have been released, the anal canal is now treated by injecting with a short-nozzled piston-syringe 10 or 20 minims of the same solution. Then the patient is placed in a semi-recumbent position for about five minutes, so that the full effect of the drug may be secured.

The adrenalin-solution in the mixture prolongs the anesthetic effect, limits the rapidity of the absorption of the cocaine, and lessens

the venous congestion that otherwise sometimes produces an annoying tenesmus lasting several hours following this procedure. It may be well to add that the solution should always be warmed to nearly the body-heat before being used, because warm solutions are more efficient than cold ones. Also, physiologic salt-solution, used instead of plain water, increases the absorbability of the cocaine.

After the expiration of five minutes, the sphincteric surface is fully anesthetized, but the muscle itself is not interfered with, and we are now ready to begin the instrumental dilatation just as well as if we were dealing with a normal, unirritated anal canal.

Kelly's Calibrator

Using what is known as Kelly's calibrator: this instrument is warmed to about body-heat and thoroughly anointed with any recognized lubricant, *except glycerin*, and then is gently pressed against the anus. By exercising pressure, say two pounds, the instrument is inserted with a boring motion. The sphincter can usually be dilated up to two inches in diameter in about five minutes. The pressure on the calibrator must be slight but steady. Any undue haste only excites spasm of the sphincter and retards progress.

If in the case at hand the sphincters are very irritable, it may be advisable at the first treatment to distend the fibers to only one inch, and then at each subsequent session slightly to increase the distention; the object being to stretch the muscle speedily to a diameter considerably larger than is ever produced by a fecal mass—which, in the natural evacuation of the bowels, is relatively slight.

Having dilated the anus as much as desired, the calibrator should be allowed to remain in place for ten or fifteen minutes, until the sphincteric grip is released. When thus the sphincter has been thoroughly dilated, the calibrator may be slowly withdrawn, the last half-inch of the instrument being withdrawn very slowly and crowded against the anterior quadrant of the sphincter. Firm pressure against the posterior wall of the anus with the examiner's free hand also prevents sudden spasm.

Occasionally it will happen that even after applying the cocaine a thorough dilatation is very painful at the first sitting. Should the patient complain of pain, the stretching must be diminished sufficiently to feel fairly comfortable, and the physician must content himself with only a partial dilatation at the

first treatment. The treatments under these circumstances should be repeated each day, gradually increasing the dilatation until the muscle is relaxed sufficiently for all purposes.

With the advent of mechanical vibration, has come another method of producing local anesthesia in certain instances. A vibratode is made to vibrate, or oscillate, upwards of 6000 times per minute, and these tremors are transmitted to the nerves of the surrounding soft tissues. In selected cases, this process gives very satisfactory results; it must not be employed in inflammatory cases, however.

Case 1. Mr. H. S. complained of sharp, cutting pain in the rectum following defecation; also had itching at the anus and bowels were constipated. His anus was tightly contracted. Digital exploration was too painful to be satisfactory either to the patient or to myself. The anus was anesthetized with cocaine, as outlined above, and after waiting five minutes I completed my examination painlessly and satisfactorily.

When disease exists above the sphincters, this same method may be followed, and when the calibrator is withdrawn the anoscope or speculum may be introduced easily and without exciting spasm. The anal canal or rectum may be examined or treated just as if the patient were anesthetized, as plenty of room is obtained for treatment of diseases of the lower inch and one-half of the bowel.

In the treatment of internal hemorrhoids, ulcers, villous tumors or other conditions requiring minor operations or treatment upon the rectum, the parts can usually be distended sufficiently without a general anesthetic, but the dilatation must be performed slowly and patiently.

Value of Preliminary Digital Examination

In the early part of the paper I called attention to the importance of digital examination preceding the instrumental dilatation, because it furnishes the examiner precise information regarding the tone, or contractile power, of the sphincter.

If you can introduce your finger into the patient's rectum easily and without feeling the "bite," or spasm, of the sphincter, be very chary about introducing a speculum and dilating the anal canal, because what little contractile power is present may be easily dissipated and a permanent partial or complete paralysis result. For example:

A woman, at the age of 26 years, was delivered instrumentally of a large boy. The perineum was ruptured, but was promptly

repaired. She recovered and enjoyed good health, having complete control of the anus. Four years later, she was operated upon for hemorrhoids, and since that operation the sphincter has been completely paralyzed. The surgeon who operated informed me that he was positive that no undue traumatism was produced. I mention this case to show that, where the nerve supply of the sphincter has been previously injured, an instrumental dilatation may be fatal to good results; and hence, a previous digital examination is indispensable.

In operating upon the rectum, and particularly when it may be necessary to drag upon the parts, the nerve must be anesthetized as far back along its trunk as the traction will be appreciated, because a nerve may be perfectly numb at the point at which it is cut or clamped, but very much alive one-half inch farther on, and if this sensitive part is dragged when examining it will be appreciated by the patient as being at the nerve and because the same fibers are involved. Therefore, if in dilating the sphincter it is necessary to move or stretch the deeper nerves, especially if exudation or inflammation extends outside

of this muscle, it will be necessary to cocaineize the nerves thoroughly outside of this area. In such cases, infiltration of the deeper nerves is necessary.

Having discoursed at some length upon the advantages of dilatation and hinted at operating upon the anus under local anesthesia, allow me to remind the reader that this method has its limitations. While cocaine or vibration may relieve the sensations of pain, they do not remove the fear or terror of being operated upon, and a highly nervous or excited patient may not be able to keep quiet or calm while he is conscious and realizes that the surgeon is at work. In a number of such cases, I completely failed to obtain any reasonable benefit from cocaine. In selected cases, however, I believe this method brings within the field of office work many patients who otherwise would be confined to their bed for several days or weeks, and also those who object to an anesthetic or in whom its administration would be inadvisable and who, consequently, continue for years with very painful and annoying ailments which might be promptly and easily relieved by their doctor.

A Discussion of Capital Punishment

By Two Convicted Criminals

A DEFENCE OF CAPITAL PUNISHMENT

By John Lacelaw, New York

A Prisoner in the New York County Penitentiary

DR. WILLIAM HENRY MOYNIHAN, chief of medical staff at the New York County penitentiary, recently brought to the editorial room of *The Prison Observer* (our institutional paper) the April and May (1915) issues of your really interesting publication, and called our attention to the articles from the pen of Louis Victor Eytinge, a life-prisoner at the Arizona state prison at Florence, in which he strongly and very ably advocates the abolition of the death penalty.

I, too, am a prisoner and in a position to appreciate fully much of your correspondent's observations on crime and criminals; and it may be possible that because of this circumstance my own dissenting views may be accorded the additional weight that goes with my own present position. I may here remark that this added weight, in my opinion, is anything but convincing regarding the question, but, on the contrary, must,

considering the force of the law of self-preservation and other self-interest, operate in just the opposite way.

In the prison from which I write, there has recently been inaugurated a great change in the methods of handling the inmates, brought about through the fortunate circumstance of the appointment to the wardenship of Mr. John J. Murtha, who, as the readers may know, has substituted an enlightened, humane administration for the truly brutalizing methods of former days.

As Mr. Murtha is working it out, *the reformation of the prisoner* is the true function of the penal institution. By an impartial administration of equal justice to all, and a system of extended privileges, dependent on the good conduct of the recipient, he has built up what amounts to a concrete example of the beneficent results of the highest ideals in penology. Here I have learned that there is plenty of good in every man, if it only can be brought to the surface; and I have further learned that a prisoner, no matter what his crime, is deserving of his liberty just as soon

as his ideas of right and wrong are properly adjusted to conform to the laws of society.

There still remains, however, a legitimate place for the law of capital punishment, when it is applied, and applied only, to exactly that class of individuals mentioned by your correspondent as having told him that they never would have committed their crime had they thought they were going to get a life-sentence. Of course, they wouldn't; and just as soon as you make a life-sentence spell a real imprisonment to the end of life, you have the only adequate substitute for capital punishment. But, can you make a life-sentence really hold for life? I do not know, for, as long as human nature remains what it is, we always shall have to count on the pardon and the escape.

The Extreme Penalty Should Be Retained

Practically the only kind of murderer that suffers the death penalty nowadays is the one against whom has been proven, beyond the shadow of a doubt, premeditation and deliberation in the commission of the crime. These are the class of persons who coolly figure beforehand the chances of not getting caught. Now, take away this penalty, and how many more would essay the role for gain or their own personal vengeance when they can calmly figure out, according to their ability, all the uncertainties of a so-called life-sentence? It would appear that the deterrent effect of the penalty is actually established by the testimony of the prisoners referred to by Mr. Eytinge.

Murder statistics are useless as a basis for conclusion, unless you can give the exact details. To say that so many murders were committed and that there were only so many legal executions, proves nothing, except that there are an entirely too large a number of killings through impulse and passion. The ratio of lynchings to legal executions bears no true relation to the subject; neither does the large increase (if such be the case) of murder in time of war. These conditions point simply to the inadequacy of the law in the particular localities affected. It is apparent that law of sufficient strength would be the true remedy.

The proposition to abolish capital punishment together with the already wholly ineffective system of life imprisonment, if carried to its legitimate finality, would bring us back to exactly that primitive condition of summary vengeance—the eye for an eye and tooth for a tooth idea. On the other hand, leave one or the other, and *make it*

certain, and the kind of murder known as first-degree would be reduced to a minimum, or, in other words, confined to those persons who stood ready to give up their own lives on the gallows or in prison (a far worse fate) as the penalty of the crime. How many would there be?

To infer from the statistics, as your correspondent would have us do, that legal executions increase murder, is, to ignore many of the surrounding facts. We might go to China, where piracy is punishable by death. Wholesale executions often take place, but nobody would claim there is any appreciable increase in this form of crime, when, if we follow the line of argument submitted, it should now be an almost universal and recognized calling.

The parental idea of the state (answering your correspondent) is exactly the same as the parental idea of the physician toward his child, that is, to use to his utmost all means within his power to correct the faults he sees; still, nobody will deny that there is a final point which, when reached, fully justifies him in turning his child from his door for the protection and wellbeing of the rest of his family. A man's action, in this case, it should be remembered, is final and complete. The state exercises the same supreme right in the only way that it can, by execution, in the absence of irrevocable life imprisonment. The physician separates himself entirely from his child-patient, and the state has the same right. That three-fourths of the wardens are against capital punishment is but natural, but proves nothing. Certainly, nobody, if he can avoid it, would want to perform such a duty as executing a fellow man. The real wonder is, that there actually are (if there are) one-fourth their number who are willing to carry out this law.

Deserving Another Chance. Hope for Change of Heart

So much for the affirmative side of this question—and I regret very much that it is in controversy with a brother in durance vile, to agree with whom it would be both easier and much more pleasant. The editor of this journal mentioned, in his head-note, that Mr. Eytinge writes letters that “pull,” and his article bears testimony to the truth of this statement. He pulled it from me in spite of my intentions, under the circumstances of our common predicament, to remain silent. However, like my comrade, I am glad I “got it off my chest,” and I have no fear he will not recognize an honest dif-

ference of opinion. At the same time, I have no hesitation in saying that in every respect Mr. Eytinge belongs to the class previously mentioned by me, men who richly deserve being accorded another chance in life. To this end, my humble services are his to command.

It is a real pleasure to record my hearty endorsement of all that he writes on the question of castration and vasectomy, both of which measures strike me as repugnant in the extreme and positively inhuman. It appears that but a short three years back Mr. Eytinge himself was advocating these penalties just as strongly as he now opposes them, but now is very thankful that he had sense enough to change his views. There is hope here, and it may be that he may yet see a new light on the capital-punishment question when it concerns the one who coolly takes the girl he has ruined out in a row-boat and leaves her dead body at the bottom of the lake, in order that he may be free to ruin another; or the high police official who influences a criminal who is dependent on him for his very liberty to shoot down a gambler who has threatened to expose his official corruption.

In like manner, my heart is with him in the battle against King Alcohol, on whose doorstep I squarely lay my own failure to make use of the many opportunities that had come my way. Happily I have reached a point where the hip-hip-hooray side of life has lost for me its onetime fascinations. However, I approve of the action taken by Warden Allen, of Joliet, for the reason that a vote of penitentiary-prisoners, calling for government action on the liquor-question, would not be fair to those who use liquor moderately and keep out of trouble also. There is at present a crying need for government supervision over the manufacture and sale of all intoxicants, to the end that the rank, adulterated poisons, that masquerade as whisky, wine or beer, may be obliterated.

Yes, it is well, as your correspondent points out, that the illustrious citizens mentioned by him were not made the victims of legal castration. The names of Col. Robert L. Wolfe, of Columbus, and W. A. Hawkins, of Detroit, are, indeed, shining examples of how a misstep may often bring out in a man all the most desirable traits of character, to the benefit of himself and the everlasting benefit of that same society that once found it necessary to send him away.

The heredity- and environment-question,

as factors in producing criminals, will always be a fruitful cause of honest differences as to their relative responsibility. My own opinion is, that environment plays the larger part, but by a smaller margin than Mr. Eytinge would have us believe. We cannot get away from the fact that there is such a thing as class in humans; and class, you know, generally tells. One person has a natural leaning to right thinking and right living, while another comes into the world with natural inclinations that are just as certainly pointing in an opposite direction. The same home influences and general environment of life would, surely, have a harder task keeping the one straight than the other, with the danger of a fall being always more imminent for him whose parental characteristics are faulty.

Socialism comes next. If this highly recommended panacea could do all the things claimed for it, most of our troubles would disappear. However, my study of this question has led me to the conclusion that it is absolutely impracticable, as long as human nature remains as it is. Its extreme claims in regard to the great questions of our times are, in my judgment, purely mythical. The moderate school of socialism advocates many reforms that, if carried through gradually, would work for truly ideal conditions of life.

AN ARRAIGNMENT OF CAPITAL PUNISHMENT

By Louis Victor Eytinge, Florence, Arizona

Life-Prisoner in the Arizona State Prison

WHAT? Reply to Brother Lacelaw? Surely—and thank you for the courtesy.

First: I would ask that every reader go over his paper once more and definitely establish what I must deny or controvert. Then, may not one ask whether Mr. Lacelaw has either advanced or denied anything? To my mind, his presentation is so inconclusive as to leave no fixed impression, no saliently striking feature to be removed. Yet, even so, let us try to undo that little which he has attempted to prove.

Mr. Lacelaw asserts that, as a prisoner, his "dissenting views may be accorded the weight that goes with his position." Frankly, I flatly deny his very *right* to speak, as a prisoner, for prisoners. His institution—Blackwell's Island—is a county workhouse for misdemeanants, petty offenders, while the real violator of the law goes to Sing-Sing, Auburn or like place. As a mere petty

offender, Mr. Lacelaw can not possibly have behind him the experience of the position that gives the right to speak authoritatively or even as a prisoner!

One might be inclined to prove my opponent's incapacity to speak on this subject by merely quoting his third paragraph, in which he tells of having learned—only very recently—through the few months of Warden Murtha's régime, that "there is plenty of good in every man, if it only can be brought to the surface." Wonderful! A discovery as old as the hills! Yet, my critic has but found out this philosophy of life since Warden Murtha has "substituted an enlightened humane administration." Mr. Murtha had been in office but three or four months when Lacelaw prepared his paper, yet, here we have a final judgment on his work in so short a time!

Conceding all the good that Murtha has done—and I grant this freely—yet, it seems ill-advised for any New York prisoner to set up as the highest ideal in penology a new warden, while the man responsible for the furthest advance in prison efficiency rests under a legal cloud—while the one man whose sincerity cannot be questioned is made the victim of as damnable a bit of political chicanery and character assassination as ever New York's political rottenness revealed.

That man is Thomas Mott Osborne, and to him should go all possible credit for all New York's prison-progress, as the prophet who prepared the path. Until New York shall have atoned for her shame, it ill becomes any prisoner hoisting any other warden as the "god out of the machine."

Capital Punishment Not Deterrent

However, sticking to the subject-matter, I submit that my opponent proves my own position, that capital punishment is not at all deterrent, when he admits that certain offenders would *not* have committed their murders had they thought they were to get a *life sentence*. Doesn't this prove life imprisonment more efficacious as a deterrent? When he admits that "life imprisonment is the only adequate substitute for the death penalty," I feel inclined to quote the words of the Great Condemned, who met His death penalty on the Cross—"Thou hast said it."

Still, my critic goes ahead and adds the proviso that as long as we have human nature we still shall have the pardon and the escape. Granted, and as long as we have human nature, there will be error of judg-

ment and accused innocence; and, if there be not accused innocence, let me give as witness Chief Baron Kelley, who stated that in his own experience as chief of the assizes no less than twenty-two innocent men were sentenced to death, seven of whom were actually executed. I wonder whether it be not better to have some guilty "lifers" earn a pardon than to have some innocent one earn the gallows! Do you, doctors, not vote for a life sentence, which gives a chance to rectify judicial error, rather than the death penalty, which destroys that which all the physicians in the world may not restore—*life!*

Some Pertinent Statistics

But, I want to protest, with all my force, against the insinuation that with a life sentence the guilty will escape through pardon—I protest against this as a silly exaggeration due to extreme ignorance of the subject. It would be well for my opponent to become versed in the statistics of this question of life-term prisoners. I am prepared to prove that more than 75 percent of lifers either die in prison or are transferred to asylums because of insanity.

Let me cite merely one state—one which has recently abolished capital punishment, and because of which fact the figures are fresher. These data show that in the state of Tennessee 89 percent of lifers die in the penitentiary, that only $5\frac{1}{4}$ percent are pardoned, and $5\frac{3}{4}$ percent have their sentences commuted. Let me remind my critic that of the pardons granted lifers these are, in many cases, but the privilege to breathe a few days and to die "outside the walls"—the dearest desire of every prisoner. Let me remind Mr. Lacelaw that in many states a lifer is not eligible to parole, save in from fifteen to thirty years, and, in his own state, after twenty years. How many men are there that are able to stand this living death, so long waiting, even in the best of prisons? I'm glad that Mr. Lacelaw brought in this sentimental exaggeration, for it gives one an opportunity to dispel an ignorant conception so commonly held.

And even so, has not Mr. Lacelaw pointed to the present writer as one who merited such parole or pardon? If there be *one* exception, then may there not be hundreds, considering the many thousands confined in our prisons? Again, if Mr. Lacelaw were to ask any reputable physician, he would find that the crime under which I myself am suffering is one that it not only is highly

improbable but practically impossible to commit; yet, I stood in the shadow of the gallows! And how many more may not there be who merit an equal vindication, yet, who have gone to a gallows' grave, convicted by even less evidence?

The downright truth is, that double, treble, yes, twenty times as many men escape all punishment by virtue of legal technicalities than through pardon, this being especially true in New York. However, Mr. Lacelaw is silent on this point. Make justice *certain*, as we say in the English manner, and our homicides will drop in number to a proportionate number—to less than one-fourth of our present rate. *Making justice sure will help to cure.*

What Figures Prove

Mr. Lacelaw sweeps aside, with a light wave of his hand, all the figures and statistics, the larger part of my paper, showing that capital punishment not only is not deterrent, but actually provocative of crime—showing that states without the death penalty show a decrease in homicide and an increase in law obedience—he sweeps all this aside with a light gesture and says, "Figures are useless as a basis for conclusions." What drivell! To tell the thousands of physician-surgeons who begged the American people to quiet their Friedmann turtle-serum hysteria until "figures" could be had—the great army of scientific men who combated the sensationalism of the twilight-sleep craze with a demand for "figures"—to tell these men that figures are useless, when they are the ones to *demand* figures—who stand or fall by the law of averages.

If there is one thing on which conclusions may be based, and one thing only, it is that same law of averages. And, so, when the carefully compiled averages for ten years of Iowa and Wisconsin are compared, we see that Iowa, with its large native population, with its low rate of illiteracy, and its high per capita wealth, yet, has *two murders for every one of its neighboring state Wisconsin*, that has not the death penalty, handicapped though it is with a 65-percent foreign-born population; when we compare Ohio, with its electric chair and a murder rate *thrice* that of Michigan, without the death penalty, but with a lawless element in its lumber-camps and its immense mining-districts; when, I say, we compare these averages, what have we but *evidences* that justify us in saying that figures alone permit of the conclusions? And, judging by these conclusions, we see

that the death penalty is a menace to society, rather than a protection.

Degeneracy as a Factor of Crime

Mr. Lacelaw foolishly forgets that his audience is composed of scientific people, when he says that only those suffer the penalty against whom there has been proven premeditation and deliberation, beyond a shadow of doubt. I say he is foolish, for, the medical man knows that some 35 percent or more prisoners are physical defectives, some 30 percent or more are mental defectives; and, if this ratio holds or increases, it also holds for those who have died upon the scaffold. If, then, considerably more than half of all law violators are defectives, what shall we call the legalized execution of those defectives whom society slew and who otherwise might have been better treated? Should it be called "murdered through ignorance"?

We now know that all the physicians who examined Guiteau privately believed him insane, but that they dared not then, in the face of public passion and prejudice and unenlightened medicolegal procedure, save this man from the hanging given an insane man. Had the crazy crank Schrank, who fired at Roosevelt, discharged his shot a score of years ago, it is possible that he, too, might have ended on the bight of a rope.

I mention these cases merely as pointing the fact that half of the men legally executed should have been otherwise handled. Yet, Mr. Lacelaw says that only cool, designing villains are given the death penalty. Mr. Lacelaw would have been more nearly correct had he said that the rope is the poor man's punishment; for, it is my experience that 95 percent of those hung are without means to fight their cases through all the courts, with all the loopholes available to a Harry Thaw, to mention one.

Whosoever Sheds Blood

His statement is, that the abolition of capital punishment would bring into vogue summary vengeance or, as he puts it, "the eye for an eye, tooth for a tooth idea." If capital punishment be not that very thing, pray, what in the world is it? And the strongest argument offered in its support is that very "eye for an eye" quotation.

But, when those states which have abolished the death penalty show a *lower* homicide-rate, a smaller number of murders, is it not *proof* that the higher humanity is productive of a higher moral standard in the commonwealth?

The Iowa-Wisconsin figures, the Ohio-Michigan comparisons, all prove this.

From report 108, Fifty-fourth Congress, one may take these extracts: "In Belgium, the rate of homicide has decreased from 9.17 per million people before to 8.004 since the banishment of the death penalty. . . . There has been no increase in crime since the abolition of the death penalty in Holland. . . . Portugal shows that the number of homicides has decreased during the succeeding years."

In the reign of the "good" king Henry VIII, a mere handful of 72,000 people were executed in Britain, and in 1819 Great Britain still showed 180 causes for which men might be legally executed; yet, if we take Mr. Lacelaw's statement, he would have us believe that a reign of crime is sure to follow the natural progress in our human understanding that abolished all save three causes for capital punishment. He would have us believe that the world went backward when it stopped burning witches on Salem Hill. Possibly he would have us go back to the Draconian Code, when every offense was punishable by death. This is an old wornout cry, that has been heard with every humanitarian advance, "It will encourage crime"—a cry of the theorist stilled in the facing of facts.

Some Famous Murder-Cases

While I submitted any quantity of statistical data showing that legal executions *do* increase murder, I am glad that my critic brushes these aside and presents sentimental reasons. I am glad that he advances the Rosenthal-Becker murder as an instance, for one has but to remind him that the assassination of Rosenthal followed very close upon the heels of the execution of four men, within an hour, in his state of New York.

I have but to remind him that there were more homicides in the week following the execution of the "four gunmen" than in any two weeks in the previous history of New York.

I am glad, too, that he called up the case of Chester Gillette dumping the body of his sweetheart into a lake, for, I will remind him that in direct sequence there came the Beattie case in Virginia, the Richeson case in Massachusetts, this last one, in turn, furnishing the inspiration for the murder, by Father Schmidt, of his own woman.

I am glad, moreover, that Mr. Lacelaw likes my *simile* of the physician-parent and his child with that of the state and its ward—I

am glad, for there is not one single physician in this intensely *humane* profession who would, himself, execute his little son, if in a fit of boyish rage, the lad had killed a playmate. And, if medical men, who study the causes so that they may arrive at cures, understand the weaknesses, the lack of control, the dominating influences of childish defectiveness, are, yet, willing to try for a cure, why, in God's name, cannot the state do that thing with its erring ward?

Let me, for the moment, take the last cases mentioned—Richeson and Father Schmidt. Here we have the polished preacher of Boston wishing to rid himself of his mistress. His crime is followed by punishment, but over in New York the crazy priest Schmidt is in the same predicament—he wishes to be rid of Anna Aumiller, and the solution of his problem comes when Richeson is executed. The inspiration is furnished him—he counts on being more successful than Richeson; but, if caught, why, it will soon be over with—for, doesn't he say, "The chair will soon end all"?

Let me take, now, another famous Boston case and compare it with these two. More than forty years ago, New England is shaken by a series of degenerative murders of young boys. One Jesse H. Pomeroy, himself a lad of fourteen, is convicted of these offenses, on evidence that today would be, perhaps, incomplete, with perhaps the medical world demanding medical care for the offender. Forty years is a long, long time, but Jesse Pomeroy is not forgotten. Guilty or not, it is not for me to say. What I do want to say is, that Richeson is forgotten and buried in his quicklime grave, while Jesse Pomeroy this day is tramping his cell in Charlestown. And, there lives no mother who can paint the dead, forgotten Richeson, the polished priestly murderer, in tones that will cause her growing sons to lift their soft hands toward heaven in an oath that they will not be Richesons—but that same mother can send those same boys into convulsions of repugnance, into soul-stirred avowals that they will not be Pomeroyes.

Richeson's crime has been repeated again and again—those charged against Pomeroy never, at least not in that locality. And *there*—in this paragraph, if you please—is my absolute proof that the death penalty is not, nor can it ever be, anything of a deterrent of crime. I can quote Pestalozzi, who certifies to four women admitting to him that they killed their babes, after seeing another girl executed for infanticide. I can

quote you an instance, where on the occasion of a public hanging at Lebanon, Tennessee, two young men made up a viewing-stand and sold space for witnessing the grewsome spectacle and—listen to this—within less than eighteen months both these men were hung for exactly the same crime as that committed by the victim they had exploited!

The Justification

I should not have replied to Mr. Lacelaw, save out of my keen desire to have medical men think more of this great question, for his argument defeats itself. Its quality is well shown in that futile reply to the fact that a symposium of prison-wardens showed more than three-fourths opposed to the death penalty. Note what a petty cause Mr. Lacelaw offers for ignoring this verdict: that they do not like to perform an unpleasant duty. He forgets that these men knew of the unpleasant duty when they took office—that many of them had been executing-officers for years—that all of them could assign deputies to the task—that with every legal killing most of them protested that the death penalty was inefficient, nondeterrent, and a dangerous lowering of public standards—that all of them had been in office

some time and as such they were the ones properly supposed to be the *real authorities* on such questions. He brushes all this aside as trivial.

I am perfectly willing that his entire argument be judged by his support of liquor, after conceding that his own ruin was brought about through that medium, when he asks that only adulterated liquors be prohibited. I am perfectly willing that his paper be judged by its claiming so much for "class," a plea for caste, or getting that out of the poorest of classes came that giant of Americanism and humanity, Abraham Lincoln, and many another leader of our lives.

On my desk is a little reproduction of Landseer's "Dignity and Impudence"—you know that painting, doctor—a picture of a barking terrier and a quiet mastiff, secure in his strength. I am tempted to mention this, because of Mr. Lacelaw's hope that, after I've had fifteen years of varied prison experience and constant study of this question, I might come to "see a new light on this capital-punishment question," perhaps under the tutelage of a man who discovers after only three months of a new warden that "there is plenty of good in every man if it can be brought to the surface." Mr. Murtha needs a better press-agent.

The Emergency Treatment of Poisoning

Practical Suggestions for the General Practitioner

By SAMUEL C. BEACH, M. D., Evanston, Illinois

[Continued from page 431, May issue.]

Veratrum

This drug exerts its principal effect on the heart, the pulse becoming small and rapid and nearly disappearing when any exertion is made. There is severe nausea and vomiting and the patient is very weak. There is also dimness of vision, increased flow of saliva, and cold wet skin. Death results from cardiac paralysis.

Treatment.—Strychnine hypodermically, with heat to the body, and brandy or ammonia per rectum, are all measures to be recommended. Keep the stomach empty after washing out, but give small pieces of ice to swallow, in the hope of allaying vomiting, which is vastly depressing. Morphine

may be successful in doing this, and it may be used.

Mercuric Chloride

The symptoms of bichloride of mercury poisoning begin within a half hour, with an acrid, metallic taste in the mouth, constricted feeling in the throat, retching, and a burning sensation in the gullet and stomach. A white coating forms at once on the shriveled lining of the mouth; the inflammation of the throat may involve the larynx, and the occurrence of acute edema may cause asphyxia. The pain in the stomach is severe, and usually is accompanied by nausea and the vomiting up of material streaked with blood. Later on there is purging, with bloody stools. Hemorrhage often occurs, this coming from

the stomach or the bowels. The urine is scanty or suppressed, the respiration difficult, the pulse thready and irregular. There is a tendency toward stupidity or even coma, which latter may finally supervene just before death. The early symptoms are always attended by prostration, great thirst, and restlessness. Death has resulted from 3 to 5 grains; yet, as much as 100 grains has been taken and, by virtue of prompt treatment, recovery has taken place. When the patient survives two or three days, constant surveillance of the kidneys must be maintained; for, the remote after-effects seem to be manifested most markedly on the kidneys, and the bowels and skin must be kept stimulated, so as to allow the nephritis to subside.

Treatment.—Give the most convenient albumin freely, such as flour paste, milk, eggs, fresh blood from a chicken, and the like. Remembering that excess of albumin redissolves the albuminate of mercury formed, the stomach should be frequently emptied either by emetics or washing. The gastro-enteritis will call for demulcents, such as linseed-tea, bran-water, starch-solution, and the like. Inasmuch as the above antidotes are all readily obtained, this treatment may also be styled the emergency treatment.

Corrosive Mineral Acids

Sulphuric, nitric, and hydrochloric acid constitute this group. The common symptoms produced by them, when swallowed, are: severe burning pain in the mouth, gullet and stomach, vomiting of acid material containing shreds of mucous membrane streaked with blood, dysphagia and dyspnea, constipation, suppression of urine, tender abdomen, great thirst, restlessness, prostration. Later, danger arises from stricture of the esophagus; still later (chronic), from lessened alkalinity of the blood, which latter produces softening of the bones and general impairment of nutrition. Inasmuch as there are individual differences in the action of these acids, a brief summary of each will here be given, followed by a general treatment for all.

Sulphuric acid is the most powerfully corrosive of the three and produces immediate destruction of tissue, giving a whitish color, but which quickly turns to brown. On black clothing, the acid spot is red, and black on white cloth, destroying the fabric, which has a characteristic "oily" or "pasty" feel. Death may occur at once when the acid is taken on an empty stomach, or the intense irritation of the glottis may cause

spasm and death from suffocation before any acid enters the gullet or stomach.

Nitric acid is volatile, and inhalation of the fumes often produces serious injury or death. The stains produced are white at first, but quickly change to orange or reddish-brown. The vomited matter gives off orange-colored fumes, which are characteristic. The symptoms after inhalation may be delayed several hours and improvement even take place, when suddenly, even after one or two weeks, there is an alarming increase in severity of the symptoms, ending in pneumonia and death.

Hydrochloric acid is the least corrosive, failing to cause perforation except when left in contact with the tissues for some time. Being volatile, however, the fumes readily pervade the lungs, setting up intense irritation. The white vapor of the acid arising from the vomited matter is characteristic. The stain produced is light-yellow and not so rapidly destructive to tissues or fabric.

Treatment.—Do not use the stomach-tube, as there is great danger of perforating the already softened tissues. Give plenty of water containing, preferably, calcined magnesia; but chalk, whiting, wall plaster, lime-water, soda, borax or soapsuds may be used in emergency.

A word of caution here as to the use of carbonates, which give off carbon-dioxide gas in large amounts when met by an acid. The ebullition of this gas in large amounts may distend the stomach to such an extent as to cause rupture, therefore the alkaline hydroxides are to be given in preference. Never give the alkalis dry, but always in solution, as they act much more quickly. When vomiting occurs, the acid is usually in the first portions of vomited matter. When it is reasonably certain that all acid has been removed or neutralized, demulcents may be given, and also opium to quiet pain.

Treat burns on the skin by first washing and then coating with moist alkali.

Have the tracheotomy instruments always handy, as operative measures may either be necessary at once or later, due to edema of the larynx or cicatricial contraction of the esophagus.

Corrosive Alkalis

The hydroxides or the hydrates of sodium, potassium, and ammonium are considered together under this head, all of them showing a common solvent action on albumin, a saponifying action when mixed with fatty

matter, and an intense avidity for the water of the tissues.

The majority of cases are accidental in origin and due to lye and washing-soda, which are both impure mixtures of sodium and potassium hydroxide and carbonate.

The symptoms are those of the corrosive acids, to which may be added general shock, varying with the location of the part attacked. There is burning pain in the mouth, gullet, and stomach, vomiting of bloody and shreddy matter, colicky pains and abdominal tenderness. Surviving the initial symptoms through prompt treatment, the patient may die later from the effects of the esophageal stricture produced.

Treatment.—This consists in the administration of any of the most readily available weak acids, such as vinegar, diluted lemon-juice, cream of tartar, and the like. Milk, olive-oil, and melted butter or lard will neutralize the alkali, but not so promptly. Do not use the stomach-tube, for fear of causing perforation. The other symptoms are to be treated as they arise. Have instruments for emergency-tracheotomy at hand.

An individual difference may be noted for ammonium hydrate (ammonia), which, being volatile, acts readily on the lungs and produces violent inflammatory reaction. It is present in many households as "hartshorn" and "ammonia," being used to remove paint and stains.

Chloral Hydrate

This drug, when taken in poisonous doses, produces deep sleep like that of anesthesia, from which it is impossible to arouse the patient. The breathing is shallow and irregular, the pulse can hardly be perceived, and the face is cyanosed. The extremities are cold and there is severe general depression, death usually being due to respiratory failure.

Treatment of Acute Poisoning.—Chloral is so soluble and so rapidly absorbed that local measures do but little good, unless the victim is seen at once. Therefore, physiological antidotes should be given, and strychnine hypodermically will be found as good as any. Hot coffee may be given by mouth and per

rectum. Inhalation of oxygen-gas has proved of great value and should always be used when possible, artificial respiration being performed in all cases until the oxygen can be procured.

Chloral is sometimes used habitually and then may produce conditions difficult to diagnose. Among these are disturbances of digestion, loss of weight, diarrhea, insomnia, and local ocular irritation. In treating this habit, withdraw the drug gradually, and push the nourishment, giving strychnine and digitalis in the meantime. It is best to place the patient in a special hospital, except when the services of two skilled and faithful nurses can be obtained.

Carbolic Acid

This is a favorite poison, because of the knowledge which people feel they have of it. It has a local as well as general effect, and, when swallowed, produces burning pain in the mouth, throat, and stomach. It produces a white burn. It is rapidly absorbed, causing great muscular weakness and facial pallor; the skin is cold and moist, and, from the action of the drug on the nervous system, the patient soon lapses into unconsciousness. The pulse is rapid and weak, the breathing irregular, and the skin becomes blue. Death occurs from respiratory failure.

Treatment.—Diluted alcohol, from its solvent action on carbolic acid, has been used of late with the best results, care being taken to empty the stomach immediately afterward. Alcohol, by its solvent property, stops local action and absorption, and is, therefore, recommended for these cases. Stimulation with strychnine and artificial respiration may also be employed.

This concludes the somewhat dry, but, nevertheless, important subject of poisoning. It is the earnest wish of the writer of this article that every physician, possibly taking the above as a basis, may immediately and completely review his or her knowledge on the subject, obtaining thereby a crystallized method for future use—and who knows when that use may be of the utmost importance in the saving of that most precious of all earthly possessions—human life?



An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

[Continued from page 341, April issue.]

Improved Galenic Medication

FRENCH chemical and pharmaceutical instruction acquired in Paris served me many helpful turns in my progressive struggles with the medication in the deadly tropical diseases. During my early years down here, I had the best French drugs, direct from the most remarkable manufacturing chemists of Paris; and I compounded and dispensed them myself.

In my fields of fearful deadly fevers and other pestilences that spread slowly from one big plantation to another, and one disease frequently following in the wake of another, the death rate was appalling, many patients being beyond the realm of hope when first seen, and that not occasionally, but in some parts all the year around. My medication and dosage were up to the recognized limits, yet, I had the humiliating pain to see poor sufferers die, whom, my presumptive intelligence admonished me, I should have saved. My faith and my patience in my academic attainments oozed from my fingers' ends. Then the supreme solicitude of my life became a sleepless purpose to save such patients and to modify the disease-conditions with which I was powerless to cope in those earlier days. Consequently, I resolved to abandon my anchorage to my costly and laborious education and to sink into deeper, darker ignorance or else to secure some measure of betterment in my management of these devastating maladies.

My conscience did not revolt at the resolve to resort to experimental practice upon patients positively predoomed to die under any system of treatment of which I was master.

Satisfied that my medication was shamefully inadequate, frequently not provoking even the slightest symptom of physiological action, I increased my dosage in a degree that under other circumstances would have inculpated me for criminal practice, and broke it up in fractions, giving these fractional doses with sufficient frequency for the whole of the increased dosage to be ingested in the authorized time of the legal rule as to dosage.

The results attained in this way were so surprising from the very inception that I

was emboldened fearlessly to venture further and further along the same lines of renegade—or improved, if you will—practice.

But I had not been long in that new forbidden practice when my legitimized treasure of improved galenic remedies arrived from Paris, and at that point my medical career had its inception, as already stated by me.

It seems pathetically mournful that I know of but one member of all the fraternity whom I met during the civil war who still is (or was, not many months ago) among the living—he is Dr. William H. Burgess, of Avondale, Chattanooga, Tennessee; the same Doctor Burgess who has gained well-merited fame all over the world through his development of epsom-salt therapy, of which I shall have something nice to say later on. There was Dr. Frank Lawrence, who left The Medical Brief as a worthy legacy to the profession, and was one of the final three to leave me in the earthly pilgrimage. I do not recall at the moment whether he or my ever lamented friend Dr. Ben H. Brodnax fell by the wayside last, though my memory hints that Doctor Lawrence continued furthest on the journey.

I refer to Doctor Brodnax just now, because I desire to place next to the active-principle development of Burrgraevae, a discovery he made as a superlative element in improved galenic medication, the most important substance and compounds employed by me in my practice. Although the substance had already been long in use, it is true, the new applications of it in medicine were the discovery of Doctor Brodnax. I refer to carbolic acid—now called phenol.

Brodnax's Discovery—The New Phenol Therapy

Up to the time of this discovery of that friend of the rural South, and for some time subsequent, I had no idea nor bare dream of anything medical beyond my own distressful field down here in the jungles of tropical Mexico. I was neither planning nor thinking of communicating to the fraternity beyond the borders, and much less to the native profession, any feature of my work and experience among my patients. My

medications and my heart were amply absorbed with things present, that were urgent and pressing altogether beyond my power and capacity to meet the demands upon my attention. In other words, I had no time to write.

In those days, the American fraternity almost absolutely ignored, even burlesqued, the new active-principle therapy and practice. I had nothing to tell them that might not be met with a sneer. I had been but little in contact with the native profession here since my early yellow-fever and smallpox fiascos. There were no medical publications in existence, while I myself was then hardly known, at any distance from my accustomed tramping-ground; so that really there was little in common between the universal medical fraternity and my isolated work. On the other hand, the elegant profession of France and Belgium was well initiated in the active-principle practice; hence, there was nothing for me to say to those brethren.

The first I heard of Doctor Brodnax's discovery was through articles, appearing in my French medical journals, carrying the assertion that liquefied crystalline carbolic acid could be poured into cavities of the human anatomy without doing harm, the critics vehemently affirming that such a procedure would prove as deadly as electrocution; this novel treatment, which he credited to Doctor Brodnax, having been recommended by a prominent clinician of Philadelphia at a meeting of some American medical society. Knowing, as I did, the sterling character of Doctor Brodnax, I believed it impossible for him to have attempted to palm off a huge and perilous hoax on the medical profession of the world.

Not Bland Oil, But Strong Carbolic Acid Into Wounds

Within a few days after reading this item, one of the customary machete duels between drunken men took place, five of the men remaining on the field of honor well hashed up, three of whom were in great danger of death when they came under my view. I promptly placed a bottle of crystal carbolic acid in a vessel of water, and placed this over a fire until it liquefied. I then poured this warm liquid directly from the bottle into the deeper and most dangerous of the flesh gashes and swabbed the smaller cuts with a big feather, washing off any chance overflows with alcohol. I noted that the flow of blood was checked immediately.

Three of the men had a raging fever and

were moaning pitifully at the time this treatment began. Little time was required to go over them all. When I had finished the last one of the two least seriously hurt, I was astounded to find the most serious one, whom I had treated first, perfectly quiet and uttering no complaint. "By George! that fellow is dead," I soliloquized, in English, and hurriedly felt his pulse—and with more reluctant trepidation than I had ever felt before in that performance. But, lo, I found a regular pulse, no more feeble than the natural sequence to the loss of so much blood, and his fever gone. The same result quickly obtained with the others, the three more seriously hurt dropping into a quiet sleep.

As I quickly stitched the deep, gaping gashes, I saw that the blood and minute particles of injured flesh had been consumed and that the action of the acid on the blood-serum had formed an impervious albuminate over the healthy surface of the walls of the lesions. And there was evident not the shade of a symptom of absorption, which certainly would have fatally supervened from using the same quantities of the usual 5-percent aqueous solution poured into the cuts, as the pure phenol had been applied. The lesions all healed in a remarkably short time, without one drop of suppuration having formed.

At that time, I was using in my work a mixture of camphor and chloral hydrate for many classes of cutaneous troubles and old sores. I at once added an equal part of the crystal phenol, the camphor and chloral having been triturated to a homogeneous liquid. I at once discovered this compound to be much less severe, the burning sensation passing off in a few minutes, while the result was almost magical.

Then I went out of my way seeking new applications for it: toe itch, seven-year itch, ringworm, ulcers, and every old thing superficially barnacled on this much-afflicted human anatomy. I successfully aborted boils and ulcers in the act of formation, and cured hemorrhoids by injecting the pure liquid phenol hypodermically, heating the syringe in water, to avoid the crystallization in the needle.

I wrote out a statement of my various experiments, stating that they had their inception in the French criticisms, and sent it to Doctor Brodnax (whose address was given in the French journals). Doctor Brodnax sent my paper to *The Medical Brief*, in which it was published, and then Doctor Brodnax ordered thousands of reprints mailed to mem-

bers of the profession who were not Brief subscribers.

The result, at this end, was that I was soon snowed under by letters from doctors, hundreds desiring to locate in practice down here, others asking a thousand and one questions about as many things; also, the editors of several medical journals requested items from this new field to them, while Doctor Lawrence himself also claimed some measure of my attention.

That Magic Phenol-Camphor Compound

In the course of time, I began to mix the compound with olive oil, 4 parts of the pure oil to 1 part of the compound; thus securing a useful preparation for catarrh, gonorrhea, sore or inflamed eyes; but I reduced the strength for women and children in proportion to conditions and age.

Now, for whatever disinfecting purpose, whenever a solution is employed in the human anatomy, I dissolve the phenol in oil, in more than double the permissible strength in watery solution, and I have a permanent application that does not lose its strength nor dry up.

It would make a big bookful to mention

all the precious service I have had from phenol and its combinations. I have put the compound, properly reduced, into deep suppurating gunshot-wounds, through a soft rubber sound, and promptly had results that other known applications failed to attain, even in capable hands. I have applied the pure liquid phenol to bleeding wounds of federal soldiers and of rebels during the different revolutions that have scourged the country in recent times, and have had results equal to those in the machete gashes mentioned above—many deep wounds that healed quickly without any stain of suppuration. There were serious wounds not possible to attend to after the primary bloody dressing, because the intervention of the other hostile party prevented seeing them again; these men remaining without other attention for long periods, the poor fellows shifting from post to pillar, as it were, to escape the firing-squad; yet these wounds finally healed under their bloody bandages, with my compound in. I do not believe any other hightoned ethical substance known and used by the aristocratic profession can nearly approximate such showing.

[To be continued.]

Vaccine- and Serum-Therapy in Everyday Practice

V. Infections of the Skin and Subcutaneous Tissues

By W. C. WOLVERTON, M. D., Linton, North Dakota

EARLY in this series of papers on bacterin- and serum-therapy, we endeavored to state plainly that this line of treatment is not meant for a cureall and that it is not our intention to exploit biological therapy, to the exclusion of time-tried medicinal remedies; but, rather, that bacterial therapy attains its most brilliant results when practiced in conjunction with the indicated active principles of drug-remedies. Therefore, as we take up each individual infectious process, we shall give not only the biological treatment, but also the collateral remedial measures, in the way of drugs and chemicals.

In order to simplify the subject as much as possible, we have not heretofore considered the specific bacteriology of individual infectious processes, believing that it were better to consider the bacteriology and treatment of each condition together, as we shall take them up one by one.

In general, we may say that the great majority of infections affecting the skin and underlying tissues are due to invasion by the "pyogenic (pus-forming) group," consisting essentially of the streptococcus pyogenes, and the staphylococcus aureus, albus, and citreus. Other organisms concerned in infections of the tissues just referred to are the pneumococcus, bacillus pyocyaneus, bacillus of tuberculosis, colon-bacillus, acne-bacillus, and, occasionally, the rarer bacteria, such as the bacillus mallei (of glanders), typhoid-bacillus, streptothrix actinomycosis, and so on.

Of the foregoing pathogenic bacteria, the streptococci and staphylococci are usually the primary invaders; later, once these malefactors have paved the way, other germs may effect a secondary invasion of the tissues; in fact, the secondary invaders may in time greatly outnumber the primary. Treat-

ment directed at the variety or varieties of bacteria concerned in the secondary infection will usually effect a considerable improvement in the conditions present; but it is evident that such treatment will not reach the underlying, or primary, infection. In such cases, a combined bacterin, containing all or at least a majority of the varieties of microorganisms responsible for the pathologic condition, is indicated.

Probably the simplest order to follow in taking up the various conditions about to be considered is the alphabetical one, and this we shall adopt.

Abscesses

Acute abscesses are almost always caused by the pyogenic cocci, but may be due to other organisms. Usually, in a given abscess, a pure culture of one specific bacterium will be found present. In *chronic* abscesses, however, two or more distinct varieties of bacteria are quite likely to be found existing conjointly. Chronic abscesses are commonly due to the bacillus of tuberculosis. Occasionally the streptothrix actinomycosis may be met with.

Ofttimes an abscess is only the local manifestation of an underlying systemic infection. For example, multiple pyemic abscesses may result from puerperal sepsis, typhoid fever, osteomyelitis, appendicitis, pneumonia, and so on. In such cases, due regard must be paid to the underlying trouble.

Naturally, wherever an abscess is so situated that it can be safely reached, evacuation of the purulent contents and subsequent drainage must be secured.

In *chronic* abscesses, where there is a thick wall of coagulated lymph and fibrin, constituting a "pyogenic membrane," which is impervious to the antibody-bearing blood-serum and lymph, the walls of the abscess should be carefully curetted, to remove the necrotic material. The cavity is then to be lightly packed with gauze saturated with Wright's citrate solution (see article III). Citric acid, in doses of 1-2 to 1 dram three times a day, administered by mouth, is indicated, in such cases, to reduce the coagulability of the serum and lymph.

In some cases, the contents of a small abscess may be removed by means of aspiration, the transudation of antibody-laden serum being thereby facilitated and recovery hastened. I recently removed, by means of a small (2 Cc.) Luer syringe, the contents of a suppurating lymph-node in the neck of an infant; this treatment was supplemented

by the injection, into the gluteal region, of a dose of a bacterin containing streptococci, staphylococci, and pneumococci. Complete recovery ensued, without the necessity of lancing the abscess; scarring was thus obviated; nor was the infection diffused throughout the surrounding loose cellular tissue of the neck, which might have happened had lancing been resorted to.

No thinking man now employs strong chemical antiseptic solutions in the treatment of infections, except in rare instances (anthrax tetanus, and so on), where it is desired to destroy infected tissues *en masse*. Strong chemical antiseptics cause coagulation of albumin of the serum and tissues and thus favor rather than hinder the growth of bacteria. Hypertonic salt-solution and Wright's citrate solution have a much more logical and favorable action, producing as they do, a copious outpouring of serum, bringing with it fresh antibodies, and washing away bacteria, toxins, dead leukocytes, and cellular detritus. In many cases, the mere existence of an abscess is indicative of a condition of lowered systemic resistance, which underlying condition may be due to intestinal autotoxemia, or to a focus of chronic infection elsewhere (pyorrhea, chronic tonsillar infection), with constant absorption of toxic products of bacterial activities. When such conditions exist, attention must, of course, be directed to their removal.

Bacterin Therapy of Abscesses

As a general rule, smaller doses of bacterin are required in acute than in chronic conditions, for reasons before stated; namely, that, in chronic cases of infection, a mutual tolerance has been established between the tissue-cells and leukocytes, on one side, and the invading bacteria on the other; hence, in chronic cases, a larger dose of bacterin is usually required to evoke an immunizing response.

Where the infection is due to a single variety of microorganism (as may often be demonstrated by the microscopic examination of a stained coverglass spread of the discharge), then a polyvalent stock bacterin containing only the corresponding variety of killed bacterium is indicated. But, when the bacterial diagnosis is not perfectly clear and self-evident, then a *combined* bacterin, containing all the various pathogenic germs liable to be involved in an infection of that particular region of the body, should be resorted to.

The average initial adult dose, in acute

cases, of the streptococcus is 25 to 30 millions; pneumococcus, the same; staphylococcus, about 100 millions. In chronic cases, the doses of the various germs should be about double those employed in acute infections.

In acute cases, the dose, increased by 50 to 100 percent, is to be repeated in from one to three days. Should any evidence of a harmful negative phase be evident, after the first or any succeeding inoculation, it would indicate that the dose was too large. Then one must wait until the negative phase has passed and the positive phase supervenes, when a somewhat smaller dose should be resorted to. In chronic cases, larger doses are employed, and at correspondingly longer intervals, of say, from four to ten days.

In chronic abscesses, due primarily to the tubercle bacillus but complicated by the pyogenic cocci, large doses of the streptostaphylococcic bacterin will be necessary to overcome the secondary infection; while some form of tubercle-bacterin or tuberculin will be required to cure the primary process. As I have before stated, I have had but a limited experience with tuberculins as therapeutic agents; hence, I can do no better than to quote Allen ("Vaccine Therapy and Opsonic Treatment," 4th Edit., p. 138), who considers the bacillen-emulsion the most suitable preparation, and gives the initial dose as 0.00001 Gram. The initial dose, he says, should not be increased so long as the immunizing response, as judged by the clinical condition, is a satisfactory one; when increase is necessary, this may be made gradually.

When a chronic abscess has at length been overcome and cured, it is well to administer occasional doses of bacterin, at say, monthly intervals, in large dosage (1 or 2 billion killed pyogenic cocci), to maintain the resistance of the tissues at as high a level as possible, and thus guard against recurrence of the infection. These periodic inoculations should be kept up until it appears that all danger of recurrence is past.

Medicinal Measures in the Treatment of Abscesses

In the treatment of acute abscesses, I would place calcium sulphide as the most powerful synergist, in conjunction with bacterins. This remedy I have employed for more than ten years, and my faith in its efficacy is unshaken. But, to get the best results from it, one must employ it in sufficient dosage. This means that it should be administered in doses of from 1-2 to 1 grain, repeated every hour or two hours, until the

wellknown odor of hydrogen sulphide is distinctly noticeable on the breath of the patient; then the interval may be lengthened to, say three hours.

Strychnine, to "take up the slack," is indicated in many cases of abscess. Where the streptococcus is implicated, there is usually more or less hemolysis, with consequent anemia. Then some form of iron should be used. A very efficient combination is the well-known triple arsenates (iron, quinine, and strychnine) combination.

In *chronic* abscesses, the iodide of iron is indicated; as is also cod liver-oil, in an emulsion freshly prepared with egg (both the albumen and the yolk), and flavored with methyl salicylate.

Acne

My experience with acne, that notoriously intractable condition, has been that excellent results can be obtained from bacterin-treatment, associated with proper hygienic and medicinal measures; provided the physician can secure the honest cooperation of the patient. Any failure, I believe, will be owing to carelessness on the part of the patient and his failure to understand the utter necessity of patiently following systematic painstaking treatment until such time as a cure has been effected, and then guarding against relapses.

As to the etiology of the various infectious conditions grouped under the designation acne, we may state that the acne-bacillus is present in virtually every case, while the staphylococcus albus is to be found as a complicating causative factor in at least one-half of the cases. Rarely the staphylococcus aureus or the streptococcus may be concerned. Accordingly, stock bacterins intended for the treatment of acne contain, usually, a combination of acne-bacillus and staphylococcus albus, in proper proportion. Polyvalency of both varieties of bacteria is an essential here, as much, or more so, than in the treatment of other infections.

The initial dosage of the acne-bacterin is about 5 million acne-bacilli and 100 million staphylococci. The dose must be gradually increased, as determined by the clinical symptoms. The proper interval between doses is about a week.

Hygienic, Dietetic, and Medicinal Treatment

In the cases just considered, a blood-count often will show the existence of anemia, and the triple arsenates of iron, quinine, and strychnine will be of benefit.

A combination I have employed with

advantage in a good many cases of acne is one containing calcium sulphide, echinacea, nux vomica, berberine, arsenic sulphide, and irisoid. The indications for the various ingredients of this combination are self-evident.

Unless you are sure that the bowels are doing their full duty, a saline laxative should be taken, immediately upon arising, every morning, in sufficient dosage to produce a free evacuation. A dose of calomel, once or twice a week, is also of value. Vegetable purgative drugs are mentioned only to be condemned. In obstinate cases, enemata must be resorted to, until the condition is gotten well in hand, when calomel and salines may be trusted to keep up the good work.

The free drinking of *pure* water is to be encouraged, since that aids elimination of toxic materials through all avenues of excretion.

A light, nutritious, easily digestible diet is imperative. These patients must avoid food cooked in the frying-pan. A vegetarian diet, supplemented with milk, is best.

Where intestinal putrefaction persists, de-

spite the efforts directed at elimination, the administration of a living culture of the bacillus bulgaricus, obtained from a reliable laboratory, is indicated.

All comedones must be expressed and pustules lanced, in order to determine the flow of antibodies to the infected foci. For a like reason, steaming the face with a bath-towel wrung from hot water, continued for fifteen minutes or so, every evening, is a measure of great value. This should be accompanied by gentle massage of the affected tissues.

The free use of warm soft water and pure, unirritating soap, for frequent bathing, must be insisted upon.

If there is a coexistent seborrhea of the scalp, a weekly shampoo should be taken, using a *pure* tar soap. This is essential, in order to obviate the possibility of reinfection from this source.

Above all, these acne patients must be encouraged to be faithful and persistent in their efforts at cooperation with the physician. Bacterin-treatment will go a long way toward effecting a cure, but will not do it alone.

The Principles of Therapeutic Immunization

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THE object of this paper is, to reiterate some of the essential details absolutely necessary to success in the use of bacterins. I have, in a measure, attempted to bring out the essential procedures usually neglected by the general practitioner and those that generally result in failure, because my experience has been that most of the patients referred to me by the general practitioner have rapidly improved as a result of careful attention to the necessary details.

The exact value and the limitation of bacterins are far from being clearly defined, notwithstanding the excellent results obtained by experts and the frequent marvelous cures reported by general practitioners.

Even those of us who specialize in therapeutic immunization occasionally fail to obtain the desired and expected result; but such failures are due, I believe, to improper application of the method of immunization. The method itself undoubtedly is efficient.

I firmly believe that localized bacterial infectious diseases can be cured, in practically every instance, by means of therapeutic immunization, provided the patient is not

suffering from some generalized metabolic derangement sufficiently severe that it cannot at least be held in abeyance by surgical or general medicinal treatment, at any rate to such an extent as to allow the patient's tissue-cells to react to the stimulus of bacterins.

Essential Factors in Bacterin-Therapy

Aside from the necessary proper medical and surgical attention, which many times constitutes half the battle, therapeutic immunization, to be successful, depends upon two factors, namely: employment of a proper vaccine, either autogenous or stock, correctly prepared and properly administered; and the insuring of a sufficient flow of lymph through the infected tissues.

Often the proper bacterin is not being employed. The average general practitioner uses one of the combined bacterins and, unfortunately, but rarely has a bacteriologic diagnosis made. In all probability, more physicians than ordinarily believed, use the Van Cott combined, the gonococcus combined, pneumococcus combined, and staphylo-

acne bacterins, to the absolute exclusion of the single bacterin. If we are to judge by the results they obtain in the majority of cases, this procedure, while not ultrascientific, is eminently practical, and, so far as I am able to ascertain, entirely harmless.

Except in the very commonest of infections, the diagnosis of the exact nature of the infection is beyond the average practitioner, calling for, as it does, expert bacteriologic knowledge, technic, and adequate facilities. But, as we are coming more and more to a realization of the possibility of transmutation of the organisms in the same group, and, owing to our limited knowledge and as yet crude methods of differentiation, the impossibility for even an expert, the exact diagnosis may be of questionable value. It is well known that concentrated sera will agglutinate various allied organisms, even though they have been produced by the immunization of other members or of a single member of a group.

A highly potent immune-serum that is specific for the gonococcus in a high dilution will, in a concentrated form, react also with the micrococcus catarrhalis and the meningococcus, organisms that we take to be distinct bacteriologically and certainly entirely distinct so far as the pathologic conditions they cause clinically are concerned, yet, belonging to a somewhat morphologically and tinctorially similar group. The interrelations of pneumococci and streptococci along similar lines are now well understood.

It is possible to conceive, therefore, that the immunization produced by one strain of streptococcus, while highly efficient against that particular strain, may also have an effect in the blood stream just sufficient to turn the balance in favor of recovery from an infection caused by an entirely different strain. However, it stands to reason, as a result of all our knowledge of immunity, that the use of an identical organism will give the best results.

Many failures are the result of the use of improper bacterins. We are inclined, usually, to consider all furuncles and ulcerations resulting therefrom as caused by staphylococci. Careful microscopic and cultural examination, however, have shown me that, when these staphylococcus bacterins fail, frequently a micrococcus catarrhalis, a colon-bacillus, streptococcus or a bacillus pyocyaneus is causing the infection; and, naturally, we should expect staphylococcus bacterins to fail.

In the preparation of an autogenous bacterin, occasionally the isolation of the causa-

tive organism is a difficult matter, especially in the case of influenza-, gonococcus-, and tubercle-bacillus infections. In the usual open infection, the diagnosis and isolation of the organism are comparatively simple. Occasionally we find, however, that most careful cultural methods are necessary, as frequently in chronic cases in which there is a profuse discharge the organisms are too few to be demonstrated microscopically; or the causative organism, as a streptococcus, may be entirely overshadowed by the enormous number of secondary invaders, such as colon-bacilli, and so on.

In closed infections, the proposition often apparently is impossible, there being no definite localized lesion available. However, in these cases, it is well to remember the possibility of focal infections, including the mouth cavity, the respiratory tract and its accessory sinuses, the auditory canal, and, in the male, especially the prostate gland. In every case, blood cultures should be made repeatedly.

A highly important fact, that is not as yet a matter of sufficient knowledge on the part of the general practitioner, is, the elimination of bacteria by the kidneys. A careful examination will usually reveal the causative organism in many cases in the urine. I have repeatedly massaged a chronic rheumatic joint and obtained the causative streptococcus from the urine, after repeated joint puncture had failed.

A single examination of the discharge from diseased tissues unfortunately is too commonly all that the average practitioner deems necessary. Many cases apparently improve as a result of bacterination for a time and then remain stationary despite increased dosage, and so on, and the physician is at a loss as to what to do. These are cases of additional infection, or some secondary infection has existed from the onset, but was not recognized and now is in the ascendency. Especially is this true of respiratory and urinary infections. Very frequently we have a new variety of infection manifesting itself during or immediately following bacterination for the original infection. A great many errors also result from the improper collection of material for examination and diagnosis.

The preparation of an autogenous bacterin does not concern the general practitioner. However, it is essential that it be properly prepared as to isolation of organisms, determination of their number, proper killing, and thorough testing in order to determine that they have been killed and that there are no

extraneous organisms present, especially tetanus-bacilli, or their spores.

The ordinary method of testing, by inoculating the surface of an agar-slant with some of the vaccine and incubating for twenty-four hours, is mentioned only to be absolutely condemned as being of no value and highly misleading. A suitable portion of the vaccine, from 5 to 20 minims, if a preservative has been added, should be inoculated into freshly prepared 1-percent glucose-veal bouillon in a 50-Cc. Smith fermentation-tube and incubated not less than seventy-two hours, preferably seven days.

How to Give Vaccines, and the Dosage

The administration of a vaccine, so far as the patient is concerned, usually does not receive sufficient consideration on the part of the physician. Personally, I inoculate through an area of the skin that has been painted some three minutes previously with tincture of iodine. I use a Luer all-glass syringe, with a very sharp platinum-iridium needle, 27-gauge, 1-2 inch in length. The skin is pinched up between the fingers, with firm pressure, then the needle is inserted with a rapid plunge; after which the bacterin is slowly injected. The only sensation the patient has, as a result of this procedure, is a slight burning lasting for probably thirty seconds. The insertion of the needle usually is not noticed.

The dose of the vaccine necessarily varies greatly. The first dose rarely ever is too small; rather, frequently too large.

In general, the dose should vary inversely as the severity of the invasion and the extent of the lesion, and it must also necessarily depend upon the general power of resistance of the patient. We aim to obtain a maximum immunizing response with a minimum of toxic effect. Even severe local reactions are to be avoided.

The clinical condition of the patient is the most practical and ample guide. The determination of the opsonic index may well be dispensed with; it is impractical, time-consuming, expensive, and misleading. The patient's general condition, pulse, temperature, and other clinical symptoms, especially the aspect of the localized lesion, as regards pain, discharge, and so on, are the surest guide.

Always begin with a small dose. Repeat this as soon as improvement begins to wane, although repeated small doses are not the most efficient. Never increase the dose until definite evidence that the previous dose

did not produce an improvement demonstrates that it was too small.

If the clinical symptoms, that is, the focal reaction, produced by a dose, last several days, that dose was too large, and the next one should be the same or even smaller. If improvement does not follow or is of short duration, the dose is too small. Only in acute infections, and then usually for not more than three or four doses, is it advisable to give a very small dose every twenty-four hours.

The Bacterin Must be Supplemented by Other Measures

The average practitioner unfortunately considers that when he has injected the bacterin he has done his full duty. But this is far removed from the truth. Provided the proper bacterin is selected and the patient's cells react by producing antibodies, the essential has not yet occurred. It is absolutely necessary that serum or lymph, highly charged with antibodies, have access and flow freely through the lesion. This is much neglected, and, yet, is nature's method of eventually destroying the infection.

Every inflamed area, whether it show the typical clinical signs of acute inflammation or not, is congested, tumefaction is present, and the circulation, because of the pressure, is practically nil. Therefore, in every case, if possible, local applications of a solution containing 1-2 percent of sodium citrate and 4 percent of sodium chloride is the ideal treatment. If the blood coagulates rapidly—as it does in many infectious diseases—the injection of 60 grains of citric acid every three hours, for four doses, is absolutely necessary; and this alone will often yield wonderful results. In addition, owing to the unquestionably valuable clinical results that we have obtained with nuclein—which is capable of doubling or trebling the leukocyte-count—we now give this as a routine procedure, either hypodermically (although it is somewhat painful this way) or in large doses by month.

We have entirely quit the use of antiseptics. In order that they may penetrate and kill the bacteria, they must be strong enough also to kill the cells and the leukocytes, and then they would also destroy the immune-bodies in the serum. Therefore, we now rely entirely upon wet-packs of sodium-citrate and sodium chloride.

The dosage of bacterins, as usually recommended by most practitioners is considered too small. However, we advise that not to

exceed 100 million staphylococci, or 50 million pneumococci (in pneumonia, 25 million), or 100 million colon-bacilli, or 50 million streptococci (preferably one-half to three-fourths of this amount) be given as the first dose. You will then avoid a severe local, focal, and general reaction, which, if either should occur as a result of the first dose, is

very liable to induce your patient to object to continuing the treatment. Acne-bacilli and diphtheroid organisms should never be given in doses greater than 10 million. These two organisms are particularly prone, in larger doses, to produce local reaction at the site of inoculation.

[To be continued]

What the General Practitioner Can Do in the Treatment of Chronic Diseases

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[Continued from page 418, May issue.]

Mechanotherapy

IN this chapter I shall discuss various forms of exercise, more particularly passive, as embraced under the general heading of mechanotherapy. I shall give the physiological action of the various methods employed, which will enable the physician to judge what form is best adapted to any particular ailment. When I come to take up the various diseases, I will then go into the matter of mechanotherapy, or exercise for remedial purposes, in detail.

Between the function of an individual organ or structure and the physiological capacity of the whole organism, there is a double connection, namely, that of the *sympathetic* control through the nervous system, and the *nutritional* influence through the circulation of the blood. These two forms of connection again are closely related to and dependent upon each other, for the reason that nutrition, through the blood circulation, is controlled by the so-called vaso-motor nerves—which are parts of the sympathetic nervous system—and the action of all nerve-tissues is dependent upon its own nutrition through the quantity and quality of the blood current.

The practical significance of all this is, that, if we wish to raise the functional power of any part, we must increase its blood supply; to stimulate the circulation or nutrition of a part, we must raise its functional capacity; to increase the circulation in and the capacity of a structure, is to intensify its metabolism; when oxidation increases, the regeneration of tissues and fluids becomes more rapid. As a necessary result, the lymphatics and ab-

sorbents do more work, and thus elimination of waste becomes more active and copious.

There are in vogue seven or eight mechanotherapeutic methods that are subject to these physiological conditions and processes, and these I shall consider under their proper heads, starting with the simplest forms and concluding with those which demand a more or less elaborate equipment and a corresponding degree of experience and skill in employing them.

The Various Forms of Mechanotherapeutic Measures

A *manual* mechanotherapeutic method involves in its application the use of the hand; it is *instrumental* when machinery or instruments are brought into service.

Swedish movements are twofold in kind. Any ordinary exercise of the organism, such as walking, riding, swimming, and other athletic sports, is a hygienic measure merely, not therapeutic; it preserves health. When the exercise is systematized and pursued according to a regular plan, for a definite purpose, it becomes therapeutic, rather restoring health than merely preserving it.

From the standpoint of therapy, any special form of exercise is called *kinesitherapy* (movement-cure, Swedish movements). The term "Swedish movements" refers to the country or people in or among which kinesitherapy has been most in vogue.

A *Swedish movement* is any form of bodily exercise having a fixed duration, direction, and purpose. The duration is limited by the tolerance of the involved part, the endurance of the patient and the character of the effect desired; the direction is indicated by the anatomical parts which are to share in the

effects; the purpose is contained in the diagnosis of the particular case. This should be thoroughly clear in the mind of the operator before any movements are begun.

There are two general varieties of Swedish movements:

1. *Active movements*, or movements that are performed by the patient through his own will and effort, without either help or interference. For example, if he bends his arm, in order to contract his biceps muscle, according to instruction from the operator, that constitutes an active movement. This form may be made to involve one or any number of the voluntary muscles, for producing some definite effect.

2. *Passive movements* may involve any number of muscles without any effort on the part of the patient, as, when the operator bends the arm of the subject, the latter neither aiding nor resisting.

The character both of active and passive movements may be changed by the kind (and amount) of labor involved in performing them. When the operator bends the patient's arm, the patient remaining passive, the effect will be very slight; but, if the patient, instructed to resist, brings the muscles into play by holding his arm rigidly extended, it is evident that the effort of bending will be greatly increased.

This principle of resistance leads to a *classification* of the various active and passive movements, as follows:

1. *Concentric movements*, which are those involved when the subject, in using certain muscles, resists the endeavor of the operator to *prevent* those movements.

2. *Excentric* (eccentric) *movements*, which are those involved when the subject resists the endeavor of the operator to produce certain movements.

Flexion, *extension*, and *rotation* are the terms applied respectively, to bending, straightening, and turning of any part.

A variation of the concentric movements may be made by causing the patient, lying flat on his back, to attempt to raise his legs without flexing the knees, while the operator opposes the movement. This, of course, would increase the intensity of the effort, with a corresponding degree of benefit derived. Other modes would consist in the patient's standing erect and then gradually bending forward without bending his knees, or he may pull himself up slowly on a horizontal bar, or perform some such exercise. The abdominal muscles would be very active in all these movements, the intraabdominal

circulation would be stimulated, venous congestion counteracted, and metabolism corrected and intensified.

The *physiological effect* produced may be stated as follows: In exercises of this kind, labor is necessary; labor incites a greater consumption of food-elements in the parts involved; metabolism becomes stronger and more rapid; there is increased production of body-heat in the active region, with a correspondingly greater amount of waste material. Exaggerated exercise, therefore, means exaggeration of all the physiological powers of organic function. In consequence, there will result increased and better nutrition; the structure will improve in quantity and quality; there will occur physiological hypertrophy, and, accordingly, greater functional power; the part will hold more blood; the blood will circulate more vigorously; venous congestion and the local autotoxic condition thereby induced will be counteracted, so that the part will become stronger, larger, more active, and more healthy.

The varieties of the Swedish movements adapted to the indications of clinical conditions are practically endless. They may involve the entire body or merely a finger or a toe. We may flex, rotate or extend, with or without resistance, the hand, arm, shoulder, foot, leg, hip, and so on, and resolve these movements into any number of subvarieties, according to any particular need. We may treat the chest, the head, the neck, the back. We may, by compressing with the flat hand one part of the chest-wall, induce fuller respiration in the other parts. The elaboration of the methods is limited only by the ingenuity and skill of the operator, in whom physiological knowledge, diagnostic judgment, and individualizing power are prerequisite qualifications for complete success. However, the full value of kinesitherapy does not become apparent, perhaps, until it is combined with other mechanotherapeutic means, especially massage.

Massage

The term massage is applied to the kneading of the soft tissues of the body according to a certain defined system. As massage may be performed by hand or by means of special apparatus, it naturally falls into two classes—manual and instrumental.

Without doubt, massage is the most venerable of all therapeutic measures, bound up, as it is, in the very instincts of the animal (human as well as brute) organism. A person who receives a sudden blow, bruise or almost

any kind of injury of his body instinctively rubs, squeezes, strokes or holds the part; while animals will lick their wounds or rub a hurt. This is massage in its rudimentary forms.

Although "handwork" is implied in the word "manipulation," this term is technically applied to all mechanical methods of treatment that affect the size or shape of any area of the body, whether by stroking, rubbing, squeezing, striking, and so on, and whether administered by hand or instrument. Manipulation, therefore, is the primary element of massage. To press the hand on a part of the body-surface, causes the latter to yield and undergo a change in size or shape, or both, the nature and duration of the change depending on the duration and force of the pressure. A mere quick slapping or striking produces alteration of the area as truly as does a long and forceful contact.

Vibration and Osteopathy

From the foregoing explanation, it becomes evident that "vibration," which at present is so popular a physiotherapeutic method, is merely a subvariety of massage, and by no means a system in itself. Under the double head of massage and Swedish movements there are included all the osteopathic manipulations; and the efforts to establish Osteopathy as a special system, as differing from massage and Swedish movements, and larger than both of the two combined, are futile.

There is nothing in Osteopathy that has not been borrowed from kinesitherapy and massage or can not be explained by spondylotherapy.

Vibratory stimulation, as advertised by certain enterprising manufacturers, has been given us by the substitution of an electric vibrator for the Osteopath's hand; and this mode, though having less claim than has Osteopathy to being a therapeutic specialty, forces vibration from its proper therapeutic position. It is neither more nor less than a form of the ages-old massage.

As to the *physiological effects*, I have already mentioned some of the physiological prin-

ciples involved in the therapeutic uses of mechanical methods, and several of these are included in the subject of the physiological effects of massage, as:

Contact: As has been already pointed out, the contact of the operator's hand or finger with the patient's body, without pressure, gives the simplest form of stimulation; and this contact produces a threefold physiological action: (1) It influences the temperature of the two surfaces, which is its thermic effect; (2) it stimulates the cutaneous nerves and induces an agitation in the interneurotic dendrites, its electrical effect; and, (3) it starts that vague motion which is supposed to be a radiation of the subtle, undefined power, *animal magnetism*, and which I will call the magnetic action of contact.

Pressure: This is contact magnified or accentuated and contains all the physiological action of contact, to which are added certain definite physical effects. The soft parts, including the blood-vessels, are compressed, and a state of relative anemia is induced; the diminution of blood being proportionate to the degree, extent and duration of the pressure. With the removal of the pressure, the circulation becomes regenerated. The blood rushes back not only with greater vigor, but because it brings with it fresh arterial blood from the deeper vessels, with improved quality. All contractile tissue, including the muscular, is affected by pressure, which, in its general action, is equivalent to the passive movement before mentioned. The lymphatics become more active, primarily in response to the manipulation, secondarily in response to the regenerated blood supply; and the nerves are influenced in the same manner.

Pressure may be varied in kind. It may be exerted downward or obliquely; it may be of long or short duration—a smart slapping or a uniform and continuous movement, as in stroking or effleurage. In short, it would be difficult to name a limit to the number of directions and ways in which it may be applied.

[To be continued]



What Others are Doing



ATROPINE FOR SPASM OF THE PYLORUS

In two instances, excellent results were witnessed by K. Ochsenius (*Deut. Med. Woch.*, 1915, No. 51) in combating pyloric spasm; however, the dosage should be, in accord with Stoltes, considerably larger than ordinarily is prescribed. Thus, in his first case, the author gave 3 drops of a 0.01 : 10 solution (0.15 mg. of atropine sulphate), repeated six times. The other case was that of an infant of six weeks, and this got as many, even, as 8 such doses, or, 1.2 mg. in a day. The medication was well borne under the circumstances. It is advisable to give a dose of the remedy, not alone just before feeding, but also during and after the nursing.

THE STEISS PROCEDURE IN PLACENTA PRAEVI

That the Steiss procedure in the management of placenta praevia is highly satisfactory, is the judgment of P. Baumm, of Breslau (*Zentralbl. f. Gyn.*, 1915, No. 50); his experience being that under it double the number of living children were born than when resort was had to the metreurynter. This is his method:

Just as soon as action is demanded and when the os has dilated sufficiently (so that, say, two fingers may be passed), external version is performed, the sac is ruptured, and then one foot of the child is drawn down into the vagina; after which, further developments are to be left as much as possible to nature, only checking any occasional oozing of blood by pulling at the foot and thus tightening the plug. Only when the os is too small or when external version cannot be accomplished (which is rare), should the metreurynter, or, inflated bag, be introduced.

DYSPNEA CAUSED BY ACID INTOXICATION IN CHILDREN

A peculiar form of dyspnea is described by John Lovett Morse in *The Boston Medical and Surgical Journal* for April 20 (p. 570), as a

symptom of an acid intoxication of infancy and childhood.

This form of dyspnea is associated with the presence of considerable quantities of acetone bodies in the urine. There is no cyanosis, and it is peculiar in the fact that the rate of respiration is increased while both inspiration and expiration are prolonged, the normal relation between the two being preserved. In this acid intoxication, the quantity of urine is reduced, while complete aneuria is not uncommon. Vomiting is very common and diarrhea frequently occurs, although constipation is not infrequent. The breath may have a peculiar aromatic odor. The cheeks are flushed and the lips of a peculiar cherry-red color.

When these symptoms are present, the desirability of making an examination of the urine is evident. Alkaline treatment would, naturally, be indicated. The association of alkalis with intestinal antiseptics, as in a preparation such as sodoxylin, will give best results.

A CASE OF SOLANINED POISONING, WITH RED VISION

In August last, a vigorous girl of not quite 9 years ate about a dozen of the ripe scarlet berries of *solanum dulcamara*, commonly known as bittersweet, and soon became seriously sick. This being in the war-zone, the only aid available was Dr. S. Hilbert, staff-surgeon of a nearby regiment, who, obviously, was not provided either with a stomach-pump or the physiologic antidotes. His report (*Muench. Med. Woch.*, 1915, p. 1785) is of special interest, inasmuch as he mentions the fact that during the toxic stage the victim's vision was affected in such a way that (aside from the temporary iridoplegia) everything looked scarlet to her, "just like the berries"; although, as the author points out, this symptom of seeing red has repeatedly been observed in poisoning by other solanaceous alkaloids (such as atropine, duboisine) as shown, for instance, by Doctor Hilbert himself in his "Pathologie des Farbensinnes" (Halle, 1897).

Free vomiting was established by homely means, until all vestiges of the berries were removed, then a little cold milk was given to drink (for the gastric irritation), and the girl was well again next day, barring some still disturbed accommodation, lack of appetite, lassitude, and pallor; the red vision had disappeared, and in five days she was in normal health. Spontaneous purging also had aided in carrying out the poisonous substance. Although the symptoms had been severe, this rapid recovery under such simple treatment must be ascribed to the early and complete removal of the offending berries.

Briefly, the symptoms exhibited were: vomiting (later purging—but both aided by copious drafts of warm water), gastric pain, headache, dizziness, cardiac palpitation, anguish, flushed face, dry skin, pulse rate of 120, and occasional intermission of pulse-beat; besides the visual disturbances. The heart-sounds were pure and clear.

For the sake of completeness, and, as a mind-refresher, we may repeat here the author's enumeration of the principal allied solanaceous alkaloids, all of which are closely alike in their physiologic and toxicologic action; namely: atropine, from *atropa belladonna* and *nicanra physaloides*; scopolamine [hyoscin], from *scopola atropoides* and *hyoscyamus niger*; duboisine, from *duboisia myoporoides*; hyoscyamine, from *hyoscyamus niger*; daturine, from *datura stramonium*. This list does not take account of the many minor principles present in the plants named and still other species of the same family of mydriatic plants nor of those allied principles formed as the result of chemical changes during extractive manipulation. Of course, there must be added solanine, from *solanum dulcamara*—the one under consideration. Other constituents of this latter plant are, dulcamarin and sugar.

STROPHANTHIN, STROPHENA, AND DIGITALIN

The intravenous administration of strophanthin has this great advantage over digitalis medication, that the influence upon the heart is secured very much sooner; only, unfortunately, declares G. Modrakowski (*Korr.-Bl. f. Schweiz. Aerzte*), this principle can not be administered subcutaneously or intramuscularly, because of the marked local irritation caused by it. In order to overcome this latter objection, a Swiss firm has perfected a dialyzate of the fluid extract of *strophanthus* (on the principle of the digitalis dialyzates)

and is marketing this under the trade-name of strophena. Modrakowski affirms having found this new preparation eminently satisfactory and free from the objectionable action indicated, while, introduced intramuscularly, producing free diuresis within a few hours.

Quoting the foregoing, Doctor Traugott, of Frankfurt a. M. (*Ther. Monatsh.*, 1915, p 402), opposes the author's position; for, at least, g-strophanthin and strophanthin-Boehringer are classed among the nonirritating digitalis-preparations (Holste: *Ther. Monatsh.*, 1914), while Loeb and Loewe have informed him that they have found the irritating properties of the latter negligible in comparison with those of the digitalis preparations now so largely introduced intramuscularly.

THE TYPHOID-FEVER CARRIERS

Medical investigators are still looking for some dependable remedy capable of ridding the intestinal tracts, of those infested, of that objectionable and dangerous organism, the bacillus typhosus. In a paper published in *The Lancet* for March 11 (p. 566), Doctors Stokes and Clark present records of an experimental study of some 800 convalescents from typhoid fever.

According to these statistics, 4 percent were temporary carriers, with the germs located in the intestinal tract, and 4 percent were temporary carriers, with the germs in the urinary tract, while 1.6 percent were chronic intestinal carriers and 0.24 percent were chronic urinary carriers. It is shown again that females are more frequently chronic carriers than are males, the incidence of female chronic carriers being nearly three times that of the males.

Various methods of treatment were tried, with a view to ridding these carriers of the Eberth bacillus. For instance, salvarsan injections were tried in 2 cases, but did not alter the condition in the least; both patients continued to excrete the germ by the stool for some time afterward.

Of the temporary urinary carriers, only two of the 33 found became chronic carriers. These 33 were given urotropin (hexamethylenamine) for about ten days, and then after an interval of about one week they were again examined. In all, the tests, without exception, proved negative on four consecutive examinations. The two patients who excreted bacilli after the twelfth week from the beginning of the illness had both suffered relapses in a late period of convalescence.

Both these patients were benefited by the urotropin course.

HYPERTHYROIDISM RELIEVED BY QUININE-AND-UREA INJECTIONS

The symptoms accompanying exophthalmic or toxic goiter are too well known to require description. These symptoms are due, presumably, to an excess of thyroid secretions, or, as it is also known, to "hyperthyroidism." Accordingly, Leigh F. Watson (*N. Y. Med. Jour.*, April 22, p. 791) states that the symptoms can be relieved by injections of a concentrated solution of quinine and urea hydrochloride. It is to be understood, of course, that this does not remove the goiter itself—merely, in part, the symptoms.

Considerable care is necessary in making these injections, since one who is inexperienced may puncture the trachea or plunge his needle into some of the large blood-vessels. Also, an excessive dosage will produce symptoms analogous to those of myxedema or of the removal of too much thyroid tissue by a surgical operation.

To minimize the slight pain caused by the injection, Watson recommends the preliminary injection into the gland of a few minims of sterile salt solution, followed by sterile water, in order thereby to prevent an acute attack of hyperthyroidism, which otherwise might follow the slight pain of the quinine and urea infiltration.

We know that the symptoms of exophthalmic goiter may be and often are relieved by quinine hydrobromide, taken by the mouth, in 5-grain doses, three times a day, alone or in association with ergotin. This is Forchheimer's treatment.

THYROID POVERTY AS A CAUSE OF PYORRHEA

The battle regarding the etiology of pyorrhea still goes on. Probably the majority of our investigators are convinced that the amebas are the essential etiologic factor; nevertheless there are many who are convinced that the affection is of bacterial origin.

Professor Talbot, as the readers of this journal will remember, considers pyorrhea as essentially of a metabolic nature and associated with a condition of acidemia. The latest theory coming to our notice is that of Dr. Heinrich Stern, of New York City, who, in *The Archives of Diagnosis* (see that journal,

1915, p. 236), implicates the thyroid gland, believing that at least in a certain proportion of gingival lesions "these are a part manifestation of myxedema or minor degrees of hypothyreosis, and that these lesions disappear, together with the other phenomena of thyroid insufficiency, on the introduction of thyroid-therapy."

In support of this theory, Doctor Stern quotes from the records of some 52 cases of hypothyroidism. He says that 14 of his patients presented more or less pronounced gingival symptoms. Although all had received dental treatment, the results obtained were indifferent. The administration of from 3 to 9 grains of thyroid gland daily for six to fourteen weeks was followed by a complete cure of the gingival inflammation in 3 instances, improvement in 5, and slight improvement in 2. The condition of the remaining 4 was not ameliorated after three or four months' administration of the drug.

This therapeutic hint is worthy of further investigation, but we should advise no one to depend upon thyroid medication to replace therapeutic methods of established value, as, for instance, the use of emetine, which, while it may, and undoubtedly does, fail at times, is just as undoubtedly proving a splendid success in very many instances.

EPILEPSY OF INTESTINAL ORIGIN

It has long been recognized that in some way, not yet clearly understood, the intestinal tract plays a part in the etiology of the convulsive seizures of epilepsy. Dr. C. A. L. Reed, of Cincinnati, recently has evolved the somewhat startling hypothesis that back of the intestinal trouble in these cases is a specific organism, which, in some way, directly gives rise to the epilepsy. This still is an unproven hypothesis, but there can be no doubt in the mind of any man who stops to think this matter over carefully that in some way the intestinal tract is largely responsible for this malady, just as it is for so many other ailments.

More evidence in support of this belief is submitted by Dr. Edward E. Cornwall in an exhaustive study of one case of epilepsy, as presented in the July number of *The Archives of Diagnosis*.

The patient was a young man 21 years of age, a student at Columbia University, there being nothing in his family history suggestive of epilepsy. His first seizure occurred in 1913, and since then, at frequent intervals, he has had attacks of unconsciousness asso-

ciated with convulsive muscular movements. These attacks came on at short intervals, in some instances being less than a week apart. He observed that "at the time of these attacks and for short periods before and after he suffered from a coated tongue, bad taste in the mouth, foul breath, belching of gas from the stomach, intestinal flatulence, giving off offensive gases from the bowels, and constipation. He also suffered from these symptoms, though in less degree, off and on between the attacks."

An x-ray examination following a bismuth meal showed that he was suffering from a coloptosis, the transverse colon resting in the pelvis, with the ascending colon extending 1 1-2 inches above the iliac crest and the descending colon 3 or 4 inches above the iliac crest. There was dilatation of the terminal portion of the ileum, insufficiency of the ileocecal valve, but no distinct obstruction anywhere in the course of the intestinal canal and no particular stasis except in the terminal portion of the ileum. Constipation, however, was troublesome and showed a tendency to persist, unless relieved by means of laxatives.

The patient was placed upon a laxative diet, including also "lactacidized milk," and laxatives of various kinds were administered. Exercise was prescribed for him, to be performed before going to bed. The result was a greater regularity in the movements of the bowel; while the premonitory symptoms of the epileptic seizures became less prominent and also less frequent, and, most important of all, the interval between seizures became longer and longer and the attacks themselves were less important.

Isn't it striking how frequently investigation into the origin of disease leads us straight back to the alimentary canal? Of course, we do not mean to imply by this statement that a course of cathartics or a modification of diet is going to "cure" every case or, for that matter, any case of epilepsy; still the frequency with which the symptoms of that disease are modified and the fact that sometimes they disappear entirely when the bowel function is given the conscientious, consistent, and continuous study that its importance demands, should open the eyes of some of our clinicians.

Whether or not Reed is right as to there being a specific bacillus, we are convinced that at some time investigation of the bacterial flora will throw a great flood of light, not alone upon the etiology of epilepsy, but upon the etiology of a whole brood of other diseases of

obscure origin as well. Meanwhile, clean out, clean up, and keep clean.

THE INJECTION-TREATMENT OF HEMORRHOIDS

English medical journals, in particular *The Lancet* and *The Practitioner*, have recently published a number of papers regarding the injection-treatment of hemorrhoids. This method seems to be much more in favor in Great Britain than it is in this country. In CLINICAL MEDICINE, last month, we reprinted a paper on this topic by Arthur S. Morley. In a letter published in *The Lancet* for April 15, F. Swinford Edwards comments approvingly upon Morley's paper and then presents his own very extensive experience with the injection-treatment.

Inasmuch as Edwards has operated upon some six thousand cases of hemorrhoids, he may safely be called an authority in this field and yet, he is a frank advocate of the injection-method of treatment. To quote his own words: "I cannot put it stronger than by saying that, if I were the subject of uncomplicated reducible internal hemorrhoids which called for operative interference, I should select injection in preference to any of the recognized operations; always provided that it could be carried out by one who had had at least some experience with its simple technic."

The great advantages of the injection-treatment, says Doctor Edwards, are as follows: (1) No confinement to bed, excepting for a few hours when possible; (2) no anesthetic, and therefore no postanesthetic vomiting; (3) no pain; (4) no enforced absence from business; (5) no risk from the little operation itself and no risk of stricture or incontinence following; and (6) immediate and steadily increasing betterment.

Of course, Doctor Edwards does not believe that every case is suitable for injection. Those which should be treated in this way, he says, are the uncomplicated internal hemorrhoids, which can be protruded, then returned and kept within the bowel.

Those cases that require subsequent attention in the hospital are subjects admitted for operation and who have, in addition, one or more of the following lesions: external tags, fissure, hypertrophied papillae, ulceration, even fistulae, or when the piles are of the internal-external variety.

Doctor Edwards, in treating hemorrhoids, employs an injection-fluid of the same strength, as that of Morley's, namely, 20 percent of pure carbolic acid in a mixture of equal parts of

water and glycerin. Formerly, he used a 10 percent solution of the phenol, but found, upon increasing the percentage of the carbolic acid, that recurrences were less frequent, while, moreover, the stronger solution is painless, and the other not.

Doctor Edwards describes his procedure as follows: "The piles having been protruded, possibly with the aid of an enema, the patient is placed in the knee-elbow position, with the buttocks opposite a good light. The parts are then sponged over with some antiseptic, say, lysol in water, and the injection made through a sterilized needle. From 3 to 6 minims of the carbolic solution is injected into the center of each pile, in turn. In large piles, I often inject 5 minims in two places. The piles are then smeared with vaseline or sulphate of iron ointment and *returned as soon as possible*, for, the injection always causes the hemorrhoid to swell; therefore, the longer they remain outside, the more difficult they are to return. I advise to prevent action of the bowels for forty-eight hours; and, should prolapse occur in the meantime, immediate replacement is essential."

Unlike Morley, Edwards injects the piles after they have been protruded, returning them immediately afterward. He agrees with Morley as to the desirability of injecting all of the piles at one sitting. While various other writers advocate injecting one pile at a time, Edwards can see no reason for this, and it seems to him an unnecessary loss of time. Piles that cannot be protruded should be left alone. They can be cured by palliative means, such as local applications, enemata, attention to diet, and regulation of the bowels.

THE HARRISON ANTINARCOTIC ACT

We find an excellent and very accurate review of the operation of the Harrison antinarcotic law in the London *Lancet* for April 1 (p. 738). As this journal points out, a year's experience in the operations of this law has demonstrated, "not only that the act was capable of smooth administration, but that during the period during which it has been in force there has been no sensible increase in the smuggling of the class of drugs which the act was designed to control." It is also stated that the larger wholesale dealers in drugs are quoted as saying that the sales of drugs of this kind have been reduced by 70 or 80 percent, while retail dealers

are agreed that the amounts supplied to the public have been materially restricted.

Some comprehension of the significance of this act can be reached from the official report of the first year's experience, in which it is stated that 140,000 medical practitioners, 42,000 dentists, 1100 veterinary surgeons, 40,000 druggists, and 400 manufacturing pharmacists have been registered under it.

That the government is thoroughly in earnest in its efforts to enforce the law to the letter, is shown by the further fact that the number of convictions thus far registered under the law is 314. How large the number of suits now pending is, we do not know, but it must be very considerable. "A fair idea of the strict manner in which the Act is being enforced," says *The Lancet*, "can be obtained from the fact that a registered person was fined for selling cocaine to a duly qualified medical practitioner whom he understood to be registered under the act, but who was not, the court holding that the plea that the seller had good reason to believe that the purchaser was entitled to buy cocaine was worthless."

Again we would urge every reader of this journal to exercise the utmost care in complying in every detail with the requirements of the Federal Antinarcotic Law. We believe that many physicians are careless, that they are taking chances. No man who values his reputation and his future can afford to do so.

CHLORAMINE: A PROMISING NEW ANTISEPTIC

Some months ago, we published in these pages reports of the remarkable results obtained, by Carrel and Dakin in France, with a modified Labarraque solution, (chlorinated lime treated with sodium bicarbonate, and boric acid), the solution being employed for the irrigation of wounds; particularly in the military hospitals. In a later paper, published in *The British Medical Journal*, Dr. H. D. Dakin (who, by the way, during the war, has been representing the Rockefeller Institute in France), suggested that it is among some of the chlorine-embodying synthetic compounds that the ideal antiseptic might possibly be found.

Among the compounds suggested by him, paratoluenesodiumsulphochloramide finally was settled upon as likely to be the most useful. A careful test of this preparation has been made, and the results obtained were reported in *The British Medical Journal* for January 29. This substance is a whitish powder giving off a slight odor of chlorine

when dry, but odorless when in solution. It is stable, nontoxic, and superior in antiseptic powers to phenol and other antiseptics generally in use. The solution may be used freely for irrigating wounds, since it is noncaustic and nonirritant.

The name *chloramine* has been suggested for this substance, and one English house has actually put it on the market under this designation. Unfortunately this name had already been adopted by another pharmaceutical manufacturer who applied it to another product.

Our readers will be kept advised about any further details published concerning this promising antiseptic, which, so far as we know, has not as yet been introduced in America.

SYNTHETIC ALBUMOSES FOR TYPHOID FEVER

A noteworthy announcement is that made by Professor Luedtke, of Wuerzburg (*Muench. Med. Woch.*, 1915, p. 321), who asserted having had some very promising results from the intravenous administration of synthetic deutra-albumose in 2 and in 4 percent solution. Defebrilization was rapid. Since the preparation of deutra-albumoses is much less laborious than that of specific serum, while the beneficial effects are equally good, Luedtke considers wider experimentation decidedly advisable.

INTRAMUSCULAR INJECTIONS OF MERCURY SALICYLATE FOR SYPHILIS

Dr. Wm. H. Best has great faith in the efficiency of mercury salicylate, given by intramuscular injection, in the treatment of syphilis. He takes sharp issue with Nelson and Anderson, who, in a recent paper, have questioned the efficiency of this drug, as checked up by the Wassermann reaction. Doctor Best believes that the failures of the two doubters are not ascribable to the drug, but to the method employed by them, in addition to giving too small doses. In a paper published in *The Medical Record* for March 11, (p. 473), Doctor Best reports a number of cases, and shows by the Wassermann-test reports that the effect is all that could be expected from this mercury compound.

Doctor Best's aim has always been, to keep the patient up to the point of saturation with the mercury salt, and, as evidence of this, he looks for slight salivation, a metallic

taste in the mouth and a slight sense of tenderness when the patient bites on his teeth.

The patients are instructed to pay great attention to the oral cavity and the intestinal canal. A heaping teaspoonful of sodium phosphate in water is taken every morning directly on rising (any other laxative saline will, of course, answer the same purpose), and he is told to drink copiously of water. As an extra precaution against ptyalism, these patients are also given tablets of atropine sulphate, 1-150 grain, one to be taken if salivation becomes marked at any time following a mercurial injection; the same dose to be repeated in eight hours, if necessary, followed by a dose of magnesium sulphate.

The usual beginning dose of the mercury salt is 1 grain. This is increased by 1-2 grain at each injection, up to the point of tolerance. The interval between injections is not definitely fixed, but, as a rule, they are given once a week. Occasionally it is desirable to omit one treatment, as when, for instance, there is retardation of absorption, induration at the seat of injection, ptyalism, excessive sensitiveness of the gums or irritation of the kidneys. However, if the excretions are properly attended to and hot sitz-baths and massage are indulged in frequently, such postponement of the injection is rarely necessary. Of course, when a patient is under intensive treatment of this kind, the toxic effect of mercury upon the kidneys should be kept in mind and the urine examined frequently. Doctor Best is accustomed to examine for albumin at each visit, and, if he finds more than a trace of it, a subsequent microscopical examination is made for casts.

The inconvenience sometimes complained of as a result of injections of mercury salicylate is due largely to faulty technic. While it is impossible to make these injections absolutely painless, the soreness experienced and the induration produced may be reduced to a minimum by taking care that none of the drug suspension is deposited in adipose tissue.

Doctor Best finds that women are prone to suffer more from these injections than do men, and this he believes to be owing to the fact that women have more fat deposited about the buttocks, and that, as a result, the fluid is more likely to be deposited in the adipose layers than in the muscle.

In order to overcome the objection alluded to, Best now uses a longer needle (length 2

inches); also, as a further precaution, he withdraws the needle quickly, and immediately exerts pressure upon the site of injection, massaging deeply but gently for a few moments, in order to prevent the suspension from leaking back ward in the track of the needle and thereby penetrating into the adipose tissue.

Should undue tenderness or induration occur, the patient is instructed to take a hot sitz-bath for ten or fifteen minutes each night before retiring, massaging the affected area all the time.

Of course, other indicated remedies are used in association with the mercury salicylate. For instance, in tertiary syphilis, he gives potassium iodide in ascending doses, while in the earlier forms salvarsan or other remedy is given, as may be required.

SODIUM CACODYLATE IN SYPHILITIC EYE DISEASES

On another page we have printed a communication from Doctor Barnett of Philadelphia, who is inclined to doubt the therapeutic efficiency of sodium cacodylate. He is especially skeptical as to its value in the later stages of the disease, and it is quite true that the majority of clinicians recommend it principally for primary syphilis. However, there is abundant evidence that it has decided therapeutic merit, even in advanced cases. This is attested by a report given before The Practitioners' Society of New York several years ago by Dr. C. S. Bull, and reported in *The Medical Record* for January 14, 1911.

On that occasion Doctor Bull reported three cases of syphilis of the choroid treated with the sodium cacodylate, the first being one of inherited syphilis, the patient first being seen when he was nine years of age. There was an extensive peripheral choroiditis, in the atrophic stage, with myopia and astigmatism. An acute attack of the disease appeared in the left eye, with rapid loss of vision. Mercury and potassium iodide were tried, both by inunction and hypodermically for three months, without effect, the patient becoming practically blind. Thereupon Doctor Bull tried an injection of sodium cacodylate into the buttock. The following day there was improvement in vision. Two other injections were given in the next few days, and on the ninth day after this treatment was begun, the vision had risen to two-sevenths normal and the vitreous had become so clear that all the details of the fundus were visible.

The second patient was a man 32 years old, suffering from acquired syphilis of three years' standing. He had been treated with mercury and potassium iodide for fourteen months, and five months before Doctor Bull saw him had an attack of iritis and choroiditis in both eyes, and the vision was reduced to the counting of fingers. This patient was also given the sodium-cacodylate treatment, with immediate improvement. After three weeks the vision was 20-30 plus, that is, it was two-thirds normal.

The third case was that of a man of 27, with acquired syphilis of five years' standing. He also had been treated with mercury and iodide of potassium, and he was suffering from a large gumma on the upper lid, and another gumma of the sclera of the right eye of several months' duration. Under the cacodylate treatment the gumma of the lid began to soften, and after the fourth injection was entirely absorbed. The vision in both eyes was greatly improved.

In the discussion of these cases, Dr. W. A. Starr said that he had used the sodium cacodylate very frequently and with no ill effects; also that it was a much favored remedy in France. He declared that there was no remedial agent which acted so rapidly in general anemia and neurasthenia, for in both it had a remarkable stimulant and tonic action and in chronic functional diseases produces an extraordinary effect.

This brief report is reproduced at this time to give the readers of this journal some idea of the character of the reports which have appeared from time to time in the literature. As to the value of sodium cacodylate, not only in syphilis and pellagra but also in neurasthenia, anemia and even in tuberculosis, there can be little doubt. Like other drugs, it has its limitations, and these will be more clearly understood and the remedial virtues more fully appreciated when it has received further study. We shall appreciate reports from our readers.

IODINE FAVORING GROWTH OF TISSUE CULTURES

A. Pitini, of the Pharmacologic Institute of Palermo, has observed (*Arch. d. Farm. Sper.*, 1915; cf. *Ther. Monatsh.*, 1915, p. 270) a decidedly favorable influence of iodine upon cultures of certain animal-tissues. The author draws a parallel between this action *in vitro* and the stimulation of diseased lymphoid and tuberculous tissues by the same agent.

Miscellaneous Articles

Therapeutic Ignorance

ONE who has any interest in *materia medica* and therapeutics very frequently comes in contact with some physician who seemingly has only a transitory education in these rather important branches of medicine. It is surprising to find how very little is known by a considerable number of our medical men, and more especially those who entered it during the days when therapeutic nihilism was rampant.

Not long ago, I was called in consultation with a man who came into the practice about ten years ago and who seemingly possessed no general education even in *materia medica*, to say nothing of applied therapeutics. We had seen the patient and returned to his office, where we were to prepare the remedies agreed upon. On looking over his shelves together, we ran across two or three drugs about which he confessed having little or no knowledge. In his search for the drugs we desired, a bottle of *echinacea* was picked up by him, then stood aside, with the remark that what he happened to know of it amounted to almost, if not absolutely, nothing—that what he did not know about it would fill a good-sized volume. A moment later, *lobelia* came to hand and was passed, with a like observation on his part.

He then ventured to ask what these two drugs were being suggested for, more particularly *echinacea*. He said he had seen something about that drug in some of the ultrascientific journals, but that those articles had not favored its use, and he believed it had been pronounced inactive, according to laboratory tests. Regarding *lobelia*, his lack of information was nearly as great, although he did admit that he knew the drug, given in sufficient quantity, acted as an emetic, but also that he had been told that it was dangerous to use. He did not know that it had any antispasmodic or relaxant action. Again did he quote the ultrascientific publication, as well as his teacher of *materia medica* and therapeutics.

I suggested that there might possibly be others who had employed both drugs, and with good results. "But," he objected, "such men are not authorities and they have not made laboratory tests." He insisted that as long as the laboratory men maintained that a drug was either inactive or too active to be safe it should not be handled by the average physician; nor did he think that any particular attention should be paid to them.

For the treatment of the patient, who was in the sthenic stage of acute pneumonia, I suggested a combination similar to the dosimetric triad, and the doctor could not understand why strychnine should be combined with aconite or why digitalin should be given at all in that stage. I also suggested that *veratrum* might be employed instead of the strychnine in the present case, as suggested by indications for the elimination of toxins; and he did not even know that the drug favors elimination. All that he knew was, that it serves to slow the pulse and reduce temperature, with a possible depression of the blood pressure.

When it came to dosage, the doctor asked what the dose of tincture of aconite might be. I replied that the U. S. P., 8th Revision, gave the average dose as 10 minims; but he insisted that never more than 3 minims was given, and probably less. Not having a dose-book at hand, I did not contradict him; besides, I did not think it necessary to give the full U. S. P. dose, but suggested giving 1 minim at short intervals.

After we had agreed as to the drugs to be employed, he wanted to know why drug the patient at all, when the disease was one of the "self-limited" kind and the patient would recover, or else die, despite all we might do? I replied, why then call a doctor at all, if he only were to sit idly by and watch the various phases, with nothing more to be done by him? I asked him if he had ever seen or known of pneumonia being aborted,

or at least abated, by the employment of the proper indicated remedies. He admitted that he had not, nor did he believe that anyone else had; adding the time-honored remark that, if anyone had said anything of the sort, there must have been a diagnostic error and that there had been no true pneumonia.

The doctor had already given calomel and a laxative saline prior to my arrival, so that the patient's bowels were well cleaned out. I suggested the use of an intestinal antiseptic, whereupon he asked why the indication for that in pneumonia—that the gut was not involved, and he could not see why it should receive such attention. I told him that I had found that clearing out the bowel and keeping it clean prevented accumulation of toxins and favored greater elimination of toxin-producing material. Again there came the other time-honored assertion, that it was impossible to render the whole bowel, with its numerous twists and turns, clean or even partly aseptic. This I did not dispute, but told him that my observations were that, with intestinal fermentation controlled, there seemed less liability to delirium, and that the other conditions in connection with the disease seemed to yield more readily to treatment; while, in addition, a patient with a clean bowel suffered little or none of the slight abdominal distress so common to all sick persons. His education having been to the contrary and he not being willing to be re-educated along this line or even to try out a remedy, so that he might see the possible effect, such as had been suggested, the antiseptics were not employed.

When it came to the question of dosage, although we were not employing the active principles, I suggested small amounts of everything given, and these to be administered at frequent intervals. Here again it was found that a new proposition was lined up for his consideration, and he could not understand how we could expect results from such minute doses—that he had been in the habit of giving the full doses at longer intervals. He could not understand why the drug effect was reached at all. This was explained to him, and finally my suggestions were accepted, and results entirely unexpected by him were obtained.

He added whisky to his line of treatment, and I asked why the need and whether the strychnine did not assure as good, if not better, stimulation. He replied that he had been taught invariably to give alcohol in some form in this disease and that it was a

matter of routine with him. In this particular case, there was more or less delirium, and I suggested that the whisky possibly might increase that condition. I also suggested that there was every indication of toxic poisoning, so, why add another toxin or toxin-producing agent. But he could not see it that way, so, the whisky was given for a few doses, until it was found that the delirium persisted; when, upon my suggestion, it was withheld. Within about two hours, owing to the effect of the aconite and veratrum (particularly of the latter, in all probability), the delirium began to subside and with it the pulse and temperature, and the patient fell asleep.

While we were talking over the case and searching for drugs to be used, we ran across some galenicals that were far from being in proper condition, and I asked why he did not employ more of the alkaloids and other active principles. His reply was that he had been taught that most of the alkaloids were too potent for general use and that he did not care to take any chances with them. I asked if he had given them much study, and his reply was negative. When I said that I wished that I had aconitine instead of the tincture he had in stock, he remarked that no one in his proper senses would employ that alkaloid—that it was too dangerous to use. I told him that I had used aconitine for upward of ten years and had never seen any bad effect whatsoever that could be traced to the drug, and he "guessed" that probably I was working with an inert preparation and that my lack of mishap was due to that fact. I replied that the product might have been inactive, but that, when exhibited properly and to meet exact indications, I had seen both pulse and temperature drop in a most satisfactory manner and without a single contrary or undesirable effect. Then he asked if I did not consider my results as coincidental, rather than due to drug effect. This I denied, saying that the aconitine had been tried out too frequently and with such uniform results as to wipe out the question of anything like coincidence. I asked him why, if so fearful of aconitine, he employed the tincture of the root, which owed its action to the alkaloid contained. To this he could give no rational answer, and fell back on his plea that the segregated alkaloid "seemed to be more potent" than that contained within the crude-drug extract.

On another occasion, while caring for his practice for a day, I was called on by a man suffering from intestinal fermentation. Hav-

ng nothing else at hand, I exhibited aspirin, and was asked, Why? I replied that an intestinal antiseptic seemed indicated and that, while other agents might be better than the one employed, like all salicylates, it probably or possibly might have the desired effect, and that I used it for the lack of something really better. The doctor said my ideas might be all right, but again insisted that the bowel could not be rendered aseptic. However, for some reason, the fermentation was overcome and the man returned to work the following day, minus any intestinal distress.

Then I asked the doctor why he did not place intestinal antiseptics in stock and employ them in such cases, and his reply was a good deal like the one appearing in some of the ultrascientific journals—that such drugs or chemicals were greatly overrated, and he could not see any real reason for their use. He said that a cleanout, followed by a dose of paregoric, did the work very well for him. I asked how many recurrences he had, and he was forced to admit several such. I told him that with the intestinal antiseptics I rarely, if ever, saw a recurrence of any acute bowel disturbance, but this he would not believe, as he said the “authorities” asserted to the contrary.

These are a few of the examples of therapeutic ignorance shown by one man. In my travels, I have found many more of like sort, until I have about reached the conclusion that, with many doctors, very little is really known of the right remedies to employ or of their indications. I have found this more especially true of the younger men—those who have come into practice within the past ten or twenty years. The majority of these have had the U. S. P. and N. F. so firmly fixed in their minds that, nothing outside these two books, so far as they are concerned, is worthy of even the slightest consideration.

The man in question entered into a tirade against some of the proprietaries, but when I called his attention to some products on his shelves which he was employing daily he said they were N. F. formulas. I asked him if he did not know they were substitutes for proprietaries, but this he would not admit. He said he did not know anything about the latter and, furthermore, did not care for any such information. He said that at least one good (?) “authority” said that proprietaries should not be employed, and that we should not question that assertion, especially we who were not possessed of

laboratory facilities to offer a final basis for argument. I asked if he did not consider clinical manifestations worthy of attention, and he said no, not in the face of the findings of the “authority” in its laboratory. I asked him if he did not think it possible that a drug might be effective when administered to a sick person, though inactive when given to a healthy animal, and he replied that, if it were not active in the latter case, it surely could not be in the former.

With such crass ignorance about the tools of our trade as is shown by a goodly number of doctors, it is great wonder that the public is not more disgusted with us than it is. When we admit that “nature must take its course” and that all we can do is to tell the patient with what disease he happens to be afflicted, and then sit idly by to see him either die or recover, we must expect nothing but disgust and distrust. We must expect to see the cultists and faddists live and thrive.

The time has come when the medical profession, as a whole, must inform itself as to how best to treat the many abnormalities confronting us. Men must know what drug is indicated under certain specific conditions and how best to employ it. They must study therapeutic specificity to a greater extent.

Much is being written and said at present about “borderline diseases,” and there is much discussion as to whether they shall remain with the internist or go to the surgeon. It is my belief that, as we give better study to our internal therapeutic agents, fewer of these cases will go on the table for operation. We are seeing a return of the gastric- and duodenal-ulcer cases to the internist; and this despite the fact that the surgeon has worked out an admirable technic and taken good care of such cases. We are seeing some of our appendix-cases, those in the catarrhal stage, doing pretty well under medical care and without operation. It may be true that we do not get complete recoveries in this latter disease, but we do relieve the patients of the many discomforts that occur after operation, and keep them in fairly good, working health.

We of the regular school are too prone to find fault with and ignore those men of other medical faiths. This is particularly true of the Eclectics. If the truth were really known, it probably would be found that men of that school could teach us much regarding the proper application of therapeutic agents. I have followed up and applied some of their teaching, and with very good results. They

were the ones to introduce the idea of small and frequently repeated doses, and today we find the regulars, to some extent at least, adopting this method of medication, and with good results. I am not saying that we should use their "specific medicines," even though they may be, and very probably are, active. No matter what the drug-preparation may be, whether it be alkaloid, glucoside, resinoid, tincture, extract or fluidextract, the Eclectic idea of dosage still remains good, and is, I believe, from personal observation and application, the proper one to employ.

However, no matter what method we employ, we must have a better idea of the things that we should employ in the treatment of the sick. We must be broader of mind, and not depend to such an extent upon what someone else tells us, but base many things upon our own, individual observations and upon the findings of many.

If one follows the books to any considerable extent, he will find, when it comes to discussion of treatment, that the authors copy very largely from those who have gone before. Some of the writers show some initiative and some accept the ideas of the rank and file, rather than of those men who are doing consultation work, very largely as diagnosticians, and who rarely follow any case from start to finish.

We should quit confining ourselves to the reading of just one or two medical journals, but hunt out information in the many—even in some of those which are subject to the ridicule of the ultrascientific ones. The man in the field, if successful (and a good man is) is not wholly without a working mind, and it is my belief that at times his opinion is worth as much as that of the man who sits upon the pedestal of authority. The former sees every phase of his case and combats every little change, and, so, gets a better idea of what is good or what may be bad. He gets his ideas from the practical application of his remedial agents in the treatment of the sick human, and, as he is very frequently successful, his methods cannot be all wrong. We have noticed that the backwoods doctor, in the vast majority of instances, has no greater mortality than does he of the metropolitan hospital; so, why not accept what he has to offer?

But, why argue when it is a self-evident fact that we must increase our knowledge of things therapeutic if we would see our profession and its members thrive, prosper, and do good work? There is no excuse for thera-

peutic ignorance when an adequate knowledge of drugs is essential to success.

GEORGE L. SERVOS.

Reno, Nev.

CALCIUM SULPHIDE AN ANTIDOTE FOR MERCURY POISONING

In the March number of *CLINICAL MEDICINE* (page 253), we published a brief statement regarding the use of calcium sulphide as an antidote for bichloride of mercury poisoning. This report was made by Wilms, who cited some very remarkable cures in apparently desperate cases of poisoning with this chemical.

At the last meeting of the Illinois State Medical Society we learn from the newspapers, Dr. B. Merrill Ricketts, of Cincinnati, gave a further report of the use of calcium sulphide for its antidotal effect. Doctor Ricketts made the statement that this treatment was worked out in his own laboratory, and he related several instances where the treatment had been successfully tried. One California woman, he said, had taken 80 grains of bichloride of mercury and her life was saved by the neutralizing effect of calcium sulphide.

His directions for administering the drug in cases of bichloride poisoning are as follows: For each grain of bichloride of mercury swallowed, give one grain of calcium sulphide by the mouth every two hours for five doses. If the treatment is not begun until forty-eight hours or more after poisoning has occurred, then the remedy (calcium sulphide) should be given intravenously, the dose being, as already stated, one grain in an ounce of water for each grain of the mercury salt.

This remedy is certainly a simple one; also, it is a remedy which practically every reader of this journal should have in his pocket-case, on account of its exceeding value in the treatment of scarlet fever, measles, whooping-cough and other contagious diseases. When its emergency action is required in a case of mercury poisoning, it is only necessary to administer the granules by mouth in appropriate doses. In order that action may be immediate, it may be desirable to give these crushed with a little sugar. When intravenous medication is desired, there is no objection to using the granules, crushed and dissolved in the necessary amount of water.

This is certainly the simplest antidote for bichloride of mercury ever suggested. It is something which is easily obtained and easily

administered; and if we may believe Doctor Ricketts, it is, by all odds, the most effective antidote as yet discovered.

We hope that every reader of *CLINICAL MEDICINE* will keep this suggestion in "the front of his head," so that when opportunity arises he will not forget its possibility.

At this point we are tempted to moralize. For years we have been advocating the use of calcium sulphide in the treatment of the various infectious diseases. We have believed, and still believe, it to be the most powerful germicide available for internal medication when safety, nontoxicity, efficiency and ease of administration are all taken into consideration. In our opinion, there is no single remedy equal to it for the treatment of the contagious diseases of childhood, but the physician must be sure of the quality of his drug (for there are few drugs of which such a large percentage of poor quality are on the market), and he must give it in full doses, to effect.

A BETTER METHOD OF UTILIZING CLINICAL MEDICINE

In the April number of *CLINICAL MEDICINE*, on page 367, is a suggestive article by Doctor Kohberger entitled "An Idea for Utilizing Clinical Medicine." The ideas presented are excellent. Instead of mutilating my copies of the journal, however, I save them and keep an index reference file for articles that I may hereafter wish to refer to. This only requires a few minutes and saves the balance of the magazines, for there are usually several articles in each number that one wishes to save, and in cutting out one article another article of equal importance may be ruined.

For instance, opening my reference file at the letter "C," I draw out a card on which I see "Circumcision, *AMERICAN JOURNAL OF CLINICAL MEDICINE*, August, 1912, page 787," and other articles likewise. If I consider it advisable, I list the article under two or more heads or letters, i. e., "Chenopodium, oil of, see under 'H' (Hookworm)," and then turn to the letter "H" for the article.

Where I do not wish to save a whole magazine, I clip the article that I wish to save and file it, but I may add that I have preserved my file of *AMERICAN JOURNAL OF CLINICAL MEDICINE* complete for a number of years, and several months ago found that some copies were missing and at once sent to you

for the missing ones. I can not afford to loose any of them.

C. W. TOMPKINS.

South Jacksonville, Fla.

[A ten years' file of *CLINICAL MEDICINE* from a practical standpoint, is better than a whole library of textbooks. By the use of the index the physician can usually find practical help on almost any subject he may think about. You know how often you will be "stumped" when trying to run down something in the books. We can supply indexes for several years back to those desiring them. No charge.—Ed.]

CURRENT COMMENT BY A COUNTRY DOCTOR

Sexology.—Dr. Wm. J. Robinson, of *The Critic and Guide*, certainly handles the various aspects of the sex-question without gloves, at least with skintight ones. Without entering into an extended discussion anent the advisability of birth limitation or, rather, the manner and extent of its advisability, this writer can not but endorse the work of strong, virile workers like Robinson, Jacobi, and others in their efforts to force a better understanding of this complex question by the people and their lawmaking exponents.

The questions relating to sex-ethics are not for the purist to handle; they can be solved only by using the plainest of speech. The idealist, be he theologian or not, who avers that he is accomplishing great results by teaching male continence (most commendable, we will admit) is known, by the medical profession, to be in error. He is accomplishing practically nothing at all in the way of disease prevention or in lowering the rate of illegitimacy, although, by his teachings, he may have preserved a negligible number of young men from sexual immorality and venereal diseases.

Some cities hide the prostitution in their precincts by spreading it, others have their "red-light district," but everywhere there is prostitution. In various ways the evil exists. Go to a settlement on the frontier outposts of civilization's advance, and what do we find? A spread of sexual disease among the natives, often almost to the point of extinction of the native type, together with a "backfire" in disease onto the "higher race." And this rule holds wherever a lower race has not been numerically strong enough to survive the disease onslaught by dilution, or,

unless an "inferior race" be protected by a rigidity of race-purity regulation and seventh-commandment observation outdoing the sternness of the Mosaic code. Examples of the latter are the Yaqui Indians of northern Mexico, who for hundreds of years have maintained comparative race purity, resisting conquest by Spanish and, later, Mexican invaders, and thus still remain a "people" (although Mexican subletting of Yaqui exploitation to American concerns seems to spell Yaqui finish), together with the branches of the Navajo tribes.

On the other hand, glance at what "civilization" did for the Hawaiians and certain tribes of American Indians, the Mojaves, for instance. It has managed to spread the unblest trinity of the two venercal infections and tuberculosis, besides a few other diseases thrown in as a result of miscegenation.

Such miscegenation proved so baleful to the higher-type race that various laws to prevent its spreading—even to tribal extermination in the case of certain "ites"—were put into the law-books of the Hebrew theocracy. Yet, even the excellent judicial and administrative powers of the Hebrews failed to accomplish as much as did the one religiohygienic regulation of circumcision—a tacit admission of the prevalence of the social evil; an evil of which we speak with hushed voice and which we decline to discuss with candor. The idea of the Jews seems to have been, "Don't do it; but, as you will do it anyway, avoid disease." Other early peoples practiced the same sanitary precaution, but with the Hebrews it was a compulsory religious rite, to be observed in infancy. Moses, that master of ancient hygiene, was strong on plenty of water and all the other prophylactics known in his times.

Why can we not emulate Moses and teach prophylaxis, until we can convert the world to a desirable degree of male continence and so protect our women in their economic environment that an equal financial chance with the male will do away with the prostitute. "Prostitute" is here used in its full sense, and it includes the female who hurriedly has her clandestine meetings elsewhere than in one of those "gilded dens of infamy," those places where the "landlady" and perhaps her special he-imp of Satan rob her until she becomes a "dope-fiend" (or did before we had the Harrison law), but, rather, a room where she (or many of her kind) provides antiseptics, in contrast to her alley-hunting sister of the scarlet robes.

This thing of sex is a big subject, but this writer believes with Dr. Isadore Dyer, of New Orleans, that society is large enough and broad enough to handle it. An ever-dominant factor is the natural polygamous tendency of the male. Go almost anywhere in the range of organic life, even back to the lilies of the field, that trust their reproductive needs to the breezes of the spring; consider the fishes, so liberal with their fertilizing elements that they entrust them to the chance commingling of the waters; then contemplate the higher vertebrates, where nature is so reckless with the seeds that she permits descent to an exposed position of the essential male generative organs; everywhere the same thing is seen. True, there are exceptions to the rule, especially in plant-life; but, the fact is that the male can be looked to for prodigality and the female for conservation. Pretty large subject this to oppose with cautiously chosen phrases; complicated enigma for mongers of sectarian—or even sex—philosophy to deal with; yet, not too vast for the evolution and progress of our modern age.

Do not leave too much medicine.—Recent writers in CLINICAL MEDICINE have well and aptly treated on this subject; nevertheless, still more can be said about it. When leaving medicine (especially in tablet form) with a patient not having in attendance a well-qualified nurse, it is an excellent rule to avoid, whenever possible, leaving enough of a potent drug to total a lethal dose if given within a short time. Mistakes will happen, and the value of this rule has been proven. Recently the writer had a case exhibiting distressing asthmatic features. Glonoin granules were left with which to control the cardinal symptoms, capillary dilation being the cardinal aim. Directions were written out, as an additional precaution after most careful verbal instructions; also, orders were given to call at the office for further medicine, and at the same time to bring along some of the patient's urine. When the messenger arrived, as agreed, he reported that the difficulty of respiration was gone, but that a horrible headache had taken the place of the original symptoms. This headache was of a kind seldom seen except in those who use nitroglycerin for blasting purposes. Most fortunately, I had not left them enough of those 1-250-grain glonoin granules to work greater havoc than to cause the bad headache. A change of volunteer nurses had been made and my instructions had become badly mixed in consequence. I need not add how we all

know what can happen from the leaving of opiates in the hands of the inexperienced.

Many times lack of intelligent nursing-help will induce the doctor to select a less potent remedy than the one first thought of. This is often a serious problem in country practice, and many a time there is no other way than for the physician himself to remain and see a patient over a crisis; thus spending time that properly belongs to his other patients, mention of his personal convenience being left out altogether.

This is a difficult feature of country practice, but one that can not be avoided and one that can be turned into profit, even if the patient can not afford to pay for the extra time. These delays can be utilized for study, if one always will have with him a late medical magazine or something he wishes to read up on. If one is too tired and too much in need of rest for study, it is a good plan to take the lightest thing obtainable in literature or something pertaining to one's hobby. Anything to relax brain tension, even down to Nick Carter, if that will concentrate attention; this is the real value of light fiction to a professional man and a hard student. The writer actually has known a hard thinker who relaxed tension at times by reading Nick Carter's fiction masterpieces, although personal preference is for Victor Hugo. If one is a follower of the suggestion of the editor of CLINICAL MEDICINE regarding his encyclopedia reading, he will always have a fresh subject of interest and of healthful, mind-broadening character.

Aside from the undesirability of leaving potent emergency remedies with a patient, the same plan of limiting the amount under all circumstances should be followed out. One should keep in touch with his patients, not alone so as to observe any change in conditions, but also to maintain over them the ever necessary psychological influence for achieving best results. The sufferer from chronic disease will follow directions better and feel his physician's personal interest in him more if he sees his doctor regularly.

Patients of this class should pay a visit at least once a week under ordinary circumstances, and when they do come in they should receive attention beyond a mere perfunctory refilling of a prescription and a "How are you this morning, Mr. Smith—better, I'm sure?" Have Smith bring some of his urine with him and see what this best index of metabolic activity has to say about it; also, do not forget that his progress may be indicated by a blood-count. Give the

patient careful attention in every way, do everything that seems necessary, and then dismiss him with but just enough medicine to last him until his next appointment. Be sure that he knows that he is receiving every needed care and that he will soon see he is getting modern service.

Above all things, do not, when called upon, send by, say, a husband, a bottle of that "same kind of medicine" you gave his wife for her rheumatism. That dollar this man brought along may look good to you, but it is not; you are not a vender of patent medicines. The reason why that medicine did that man's wife good was, because you saw just what her condition was at that particular time. Let that dollar go right back home, and let Mrs. What's-her-name herself come to you with it, and another one besides for her proper examination. The lady would like to have a refill and a copy of this prescription, too, so that she can hawk "doc's" prescription all over God's creation. But, you have no "favorite prescription." *Let that dollar go!*

Those Active Principles.—To one who has always been a believer in "specific medication," with the full understanding that "specific" does not mean specific for a named disease, but specific in effect on certain symptom-groupings, the arrival of a fuller list of active principles means a greater number of accurate remedies at command; sometimes with the necessity of separating the action of an active principle from the action of the whole drug. To one who has been in the habit of grouping therapeutic agents according to their gross physiological action, acceptance of the finer differentiation of specific medication opens a new field and wonderfully increases efficiency of work as expressed in results.

The day of the internist is here, if he will but avail himself of the newer methods of treatment, including the use of the active principles, animal-therapy, the bacterins, the modern agents both for external and internal antiseptics, and up to date diagnostic aids. All these, together with the latest hygiene and rational dietetics.

Let any physician who has never used the active principles select a few having the plainest indications, and before long he will marvel at the broadening of his therapeutic resources and become a successful user of many drugs of which he before knew practically nothing. The man having a thorough working-knowledge of modern therapeutic means for the alleviation or cure of disease

can outdistance his competitor who boasts that he uses only half a dozen drugs in addition to his hygienic prescriptions. The competitor is practically only advance agent for the surgeon or other specialist; incidentally also a recruiting agent for the various drugless fads and fancies that have grown up through spread to the laity of medical nihilism.

If a patient is unsuccessfully treated by a physician who intimates to him that disease is practically self-limited or incurable and that, beyond opening the bowels or giving an opiate, there is no value in medicine, except surgery, no wonder the sick man makes a break for the esoteric egotist, who at least has effrontery enough to give high-grade suggestion.

"Clean out" those patients, then get very busy with the indicated remedy and cure them, thus they will not be added to the vast number who not only keep away from the physician, but are active in their propaganda to keep others away. Don't be so afraid of that word "cure." Never mind if the fossilized living or the revered ghosts of those who departed this life in hide-bound conservatism are, and were, medical nihilists—we do not have to be also.

Rhusoid.—Of the numerous drugs which have received undeserved neglect at the hands of very many practitioners, rhus toxicodendron (just poison-oak or poison-ivy), which has enough latent drug-power to make itself manifest in misery to many, by such small dosage that they claim to have "just passed by it," is one.

Reading a recent symposium upon the treatment of sciatica, the writer saw nothing about the use of rhusoid or of colchicine, but much as to improvement in the technic of the old surgical procedure of "stretching" the nerve, and also something of injections of alcohol or hot water at the nerve site. Cases there doubtless are which call for such heroic treatment, but, many have received this line of attention who, we believe, would have gotten well under rhusoid and colchicine, both pushed to effect.

If the pains are boring in character, relieved by motion, and the pulse is the quick, sharp one of pronounced irritation, the case of sciatica is one for rhusoid, before stretching the nerve or other heroism is thought of. Add to these indications frontal headache, papillæ of tongue red, burning sensation in parts of the surface and pain on the left side, or worse on left side, and an outline picture of a rhus-patient is given.

In all cases of "rheumatism," the first two remedies thought of should be, rhusoid and bryonin to relieve, the symptoms calling for either easily separating themselves. Rhus-pains are relieved by motion, bryonin-pains are made worse thereby, bryonin being a remedy where serous membranes are involved.

Rhusoid is often efficacious in enuresis and in other conditions, but the present mention is of its remarkable efficacy in rheumatoid troubles, *where indicated by the symptoms.*

Rhusoid, bryonin, macrotoid, and colchicine constitute a group of wondrous powers if used accurately according to the symptomatology and in connection with proper elimination—an imperative measure. The entire resources of modern medicine have not been exhausted with a systemic saturation with the salicylates. If the patient is a "chronic," it is a safe wager that he has already been loaded with these, sometimes most essential, drugs.

Take hold of the case in earnest, examine the urine and do all else possible to determine the nature of his "rheumatism." Local applications are at times of aid, especially for the palliation of pain. Where swelling or congestion exists, the hot saturated solution of magnesium sulphate is often without a superior; and it may be applied under oilsilk, thus avoiding frequent changes. The rheumatism combination of Doctor Candler frequently is effective in very stubborn cases, and the colchicine which it contains is a most excellent pain-reliever to alternate with rhusoid or other selected agent. Most of that "rheumatiz" and "gout" can be cured.

A. L. NOURSE.

Sawyer ville, Ala.

INTRAVENOUS AND SUBCUTANEOUS MEDICATION

There is a growing interest in intravenous and subcutaneous medication; and as CLINICAL MEDICINE is always "Johnny on the spot" in presenting to its readers everything that can be helpful, we are anxious to have an expression of opinion from as many of the readers as possible regarding this method of treatment. I hope that many of you will tell us, in a brief letter for publication, something about your experience in this line—particularly with intravenous medication.

What is your technic? What kind of syringe do you use? What is the length and caliber of the needles you employ? What precautions do you take against accident? Have you had accidents of any kind? How

much solution do you inject? What remedies do you employ in this way? What are the advantages and what the disadvantages of this method of treatment?

I hope that a great many readers of THE CLINIC will write me. I want a symposium that will be a real symposium.

INTRAVENOUS MEDICATION

While for years I have thought it one of the best of medical journals, CLINICAL MEDICINE is growing better every month.

The May number, particularly, is full of good things, and in this Doctor Neiman's article on sodium cacodylate is especially interesting to me, as I have used this remedy intravenously for several years, and with such splendid success that I have come to believe that most of the failures reported have resulted from too small dosage. As for myself, I give 5, 8, 10, and even 15 grains of the cacodylate, and in more than 1000 injections I have as yet failed to see one bad result follow these large doses.

While we see practically no pellagra in the North, from an analytical study of the diseases and the drug, the cacodylate seemed to be the one remedy to fit a majority of these cases; and in an article published in *The Medical Standard* of October, 1914, I mentioned Elrod's report of a very satisfactory result from its intravenous use in pellagra.

Psoriasis is another disease that responds to the cacodylate in a very satisfactory manner in a good percentage of cases.

I am using a number of other remedies intravenously, and one that is making good with me is the sodium glycerophosphate in sciatica, facial neuralgia, and various other nervous conditions accompanied by pain. Spinal irritation and the pains of tabes are often relieved by the intravenous use of this preparation.

In numerous cases of rheumatism, I get prompt results from the intravenous injection of sodium salicylate and caffeine, especially in rheumatic fever.

These remedies are marketed in sterile ampules, in various-sized doses, convenient for use. No drug should be administered by the venous route unless it can be made sterile without losing its individuality and activity, and it requires care and study to secure this end.

It is really unfortunate that so many physicians are afraid of the intravenous method of administering drugs, inasmuch as the prompt results, with the assurance that the

indicated remedy gets into the blood stream unchanged, together with longer intervals between treatments, has advantages over other methods in many ways.

W. N. FOWLER.

Kalamazoo, Mich.

[We are promised a paper on intravenous medication, giving the technic of this form of medication in such detail that the method can be mastered by any competent physician. We hope to be able to print this article within the next two or three months. Useful formulas and many therapeutic suggestions will be embodied in it.

Much that Doctor Fowler says in praise of intravenous medication also applies to hypodermatic medication. Unless the drug is one that is irritant, therefore causing considerable pain, the ordinary subcutaneous route is the one that appeals to most physicians. But there are remedies that should be given intravenously, for one reason or another. And this is "another story."—ED.]

AN OMISSION FROM DOCTOR RITTENHOUSE'S COMMENT

In the May number of CLINICAL MEDICINE, in my comment on Doctor Ewing's article, page 446, second column, the accidental omission of a sentence renders my meaning obscure. The passage should read as follows:

"I apply the Hodge forceps, which I always carry, in the usual way. *Then I pass a strong fillet of gauze through the fenestra of both blades.* An assistant pulls moderately on the handles in the direction of the patient's feet, while I make traction on the fillet downward and backward."

Omission of the italicized words rendered what follows unintelligible. Readers should enter this correction.

WM. RITTENHOUSE.

Chicago, Ill.

SALVARSAN AND SODIUM CACODYLATE

In CLINICAL MEDICINE for May, Doctor Neiman offers sodium cacodylate as a good substitute for salvarsan. As instructor in genitourinary diseases in the Philadelphia Polyclinic Hospital and College for graduates in medicine, I have had the opportunity to study 500 cases of syphilis, the result of which observation will be published later. Many of these patients were treated with sodium cacodylate, both intravenously and intramuscularly, and I have yet to see the case

that showed any marked signs of improvement or any improvement in the Wassermann reaction. I, therefore, cannot permit such statements as those by Doctor Neiman to go unchallenged.

In your editorial, you show how nicely Dr. J. B. Murphy cures chancres with this drug, but he does not tell us how the blood condition will be after he is through. I wager anything that the blood would show a positive reaction. What good, then, is the sodium cacodylate? Knowing this, would it not be criminal for me to try to cure the earliest stages of syphilis with this drug, the stage in which, since the introduction of salvarsan we have hoped to eradicate this disease from the human system?

Let me say here, whether it be Murphy, Neiman or anyone else, that you can not cure syphilis—that is, effect a radical cure—with sodium cacodylate. You cannot with it, improve the Wassermann reaction; in fact, every article that I have read and my own experience have shown that the drug has no effect upon the Wassermann reaction.

Our latest method of trying out this remedy has been, to give as high as 30 grains twice weekly intravenously, yet, the patient did not display any toxic symptoms whatever. And this, I am sure, is a larger dose than any of the authors ever used; and, yet, this great amount has failed to produce any effect upon the lesions and upon the Wassermann reaction.

I recall a case of secondary eruption of about two weeks' duration, in which the patient could not afford salvarsan or its congeners. So, we gave him, intravenously twice a week, $7\frac{1}{2}$ grains of sodium cacodylate (by the way, his Wassermann test showed strongly plus) for 5 weeks, and then 15 grains twice a week for three weeks, and then 30 grains twice a week for two weeks; but this was without any effect upon the Wassermann reaction, although a very slight fading of the eruption occurred. The total cost of this course of cacodylate amounted to nearly as much as two doses of salvarsan would have cost him as a hospital-patient. Would not two doses of salvarsan have removed his eruption and reduced his Wassermann? From my experience in such cases I say, yes. Why, then, use sodium cacodylate?

In another case, one of sarcocele, with the Wassermann reaction strongly positive, 30 grains of the cacodylate were given twice weekly for five weeks, without producing any effect upon the size of the tumor or upon the blood.

What more than these cases do we need to prove the worthlessness of sodium cacodylate?

However, Doctor Neiman used mercury in conjunction with this drug. It is perhaps the mercury in his cases that produces the results; it certainly is the cause of any improvement in this patient's blood. Let him use the sodium cacodylate alone, and he will soon prove this to his own satisfaction.

Regarding the statement in your journal about the Philadelphia arsenobenzol, as to its not being made for profit or sale, you have been wrongly informed. Just look at your page 43, and you will see that you have an advertisement of that very drug, saying that it is for sale.

You say that true salvarsan is not to be had, and this is a fact. And I want to say that it is a Godsend that Doctor Raisiss, the chemist, in conjunction with Doctors Schamberg and Kolmer is working this drug out; because it, and it alone, is the best substitute we have for true salvarsan. It not only will heal the lesions, but will clear up the blood as well.

However, it requires more doses of this latter drug to effect a radical cure than it does of salvarsan. But what of that? I feel that I can safely speak of this drug, because we have used about 100 doses of it, and also I have seen Doctor Schamberg and his coworkers give about 200, and I find that the reaction is very slight. Most patients can go home, and do, immediately after receiving the injection, without experiencing any ill effects on their way.

Therefore, I strongly advocate this Schamberg arsenobenzol as a substitute for true salvarsan. There is another substitute, and that is arsenobenzol "Billion," a French salvarsan. But I do not recommend it because the reactions are so severe that 80 percent of the patients must remain over night.

In conclusion, I will say: (1) The best substitute for salvarsan is the arsenobenzol that is made here in Philadelphia. (2) The next-best is the French arsenobenzol Billion, but it has too severe reaction. (3) Sodium cacodylate never will take the place of salvarsan or of its congeners; it is without effect upon the blood. And no luetic can be considered as cured unless the Wassermann reaction is negative and remains so.

CHARLES H. J. BARNETT.

Philadelphia, Pa.

[We are very glad that Doctor Barnett has taken up his cudgels in behalf of salvarsan,

or its American substitute, arsenobenzol. We certainly do not forget the value of Ehrlich's great discovery, and when salvarsan is obtainable we recommend its use, providing the physician understands thoroughly the technic of its administration. It should be remembered that there have been many accidents and not a few deaths following its use, while sodium cacodylate is practically nontoxic.

We believe, however, that Doctor Barnett has gone to the other extreme in his condemnation of sodium cacodylate. That this remedy has very great value in syphilis is as nearly established as anything therapeutic can be. While it may be true that its administration is not followed by a negative Wassermann, it is equally true that, given in early syphilis, it almost invariably produces improvement in the symptoms and cessation of physical evidences of the disease in a manner which is, as Murphy and others have stated, truly remarkable. The writer has read a number of articles about sodium cacodylate, and thus far he has not found one which denies the value of this remedy in early syphilis. He can refer you to articles by Spivak, Suggett, Caffrey, Bull, Schirrmann, and others, appearing in a number of medical journals.

Of these writers, Louis J. Spivak, who is pathologist and serologist to the genitourinary department of the Jefferson Medical College Hospital, is about as careful and as critical as any. While he agrees with Doctor Barnett that the effect of the drug on the Wassermann reaction is practically nil, he declares that it is "a useful adjunct in the treatment of syphilis, especially where salvarsan cannot be used, either for financial reasons or through some physical condition of the patient." He adds, "Sodium cacodylate is cheap, easily prepared and very easy to administer"; and he also says: "It has a marvelous effect on the initial lesion and on the maculoroseolar eruptions. The action on the papular syphiloderma is somewhat slower, but in large doses it is effective. The drug has practically no effect on the adenopathies. Enlarged cervical, epitrochlear, and inguinal glands persist in spite of massive doses. Mucous patches and condylomata clear up readily without any other treatment. The drug has a splendid alterative effect and can be used for that alone in the course of syphilitic treatment. All patients, whether their lesions were benefited or not, speak of a sense of wellbeing, of added strength, of a better appetite, and even of an increase in weight.

On the rupia and tertiary lesions, sodium cacodylate has practically no effect."

It would be easy to submit evidence from a dozen different men of high standing who are enthusiastic advocates of sodium cacodylate, not the least important being, as Spivak says, that "it is nonpoisonous to the human system, even in doses as high as five or six grains injected daily for three weeks, even for a month."

It should be remembered in this connection also that salvarsan is no longer depended upon to cure syphilis. Given early, it may produce a negative Wassermann, but practically always the disease recurs in some form or other unless mercury is associated with the treatment. Therefore, salvarsan and mercury go hand in hand, and I do not know of a single syphilologist of distinction in this country who now depends upon salvarsan alone for perfect cure. The clinical benefits obtained from the use of salvarsan are analogous to those obtained from sodium cacodylate, although the effect on the Wassermann reaction obtained from salvarsan is much more pronounced than that from sodium cacodylate.

As an instance of the faith of one great man in sodium cacodylate, I am reproducing herewith [see next item] the article by Dr. John B. Murphy referred to in our editorial last month. This is the introductory article in the August, 1915, number of "The Clinics of John B. Murphy," published by W. B. Saunders & Co. Doctor Murphy's experience is probably as extensive as that of any man in Chicago—perhaps any man in the country.

We are sorry that we overlooked the advertisement of the Philadelphia arsenobenzol in the last number of CLINICAL MEDICINE. This shows that the editor does not himself read the advertising pages as closely as he should. We are glad indeed to note that American chemists are doing this work, and so far as possible we are glad to support them. We sincerely hope that every reader of these pages who is in need of this preparation will get into touch with the manufacturers, whose advertisement appears again in this issue of CLINICAL MEDICINE, page 43.—Ed.]

A TALK ON SYPHILIS

[EDITORIAL NOTE.—The following talk on syphilis is reprinted from the August, 1915, number of "The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago." This is a bimonthly publication issued by the W. B.

Saunders Company of Philadelphia. The talk which follows is the first article in the number referred to. It is reproduced in its entirety because of the interest now being displayed in sodium cacodylate.]

DR. MURPHY (October 8, 1914): We have two very interesting cases that came into the office yesterday. The first is that of an engineer who contracted a chancre of the tongue, at its middle, from smoking a pipe that had been used by his syphilitic fireman. At the time of his first visit, eight days previously, we immediately scraped his tongue, excised a piece, and stained for spirochetes, the detection of which confirmed the diagnosis. Then we instituted what we believe to be the best method of treating early syphilis, namely, daily hypodermic injections of sodium cacodylate. I recently recommended salvarsan, but I have returned to my first love, which I originally suggested and used before we had '606.' Upon his return yesterday the chancre had shrunk to one-sixth of its original size. I know that it will be healed when he returns for the next visit, six days hence, allowing just two weeks from the time of the original sodium cacodylate injection to that of complete healing. Usually chancres heal within from six to seven days, and much faster with sodium cacodylate than with salvarsan. The speed of repair is accelerated by putting chrysolate of argyrol over the surface of the sore at the first visit. Owing to the great increase in the price of salvarsan, from \$30.00 to \$35.00 an ounce, I think sodium cacodylate is the therapeutic agent of the future. Fifteen cents' worth is sufficient to cure a chancre.

"We are very much impressed with the rapidity with which the primary lesion is healed by sodium cacodylate. As to the permanency of the cure, we are not so certain, but we know that '606' has been a failure as regards permanency of cure and a great disappointment.

"The second case was that of a doctor who, despite an abrasion on the back of his finger, examined a patient with ungloved hand and contracted a typical chancre. He will likewise be treated with sodium cacodylate, beginning with two grains hypodermically. Unfortunately, his disease is in a much later stage, because the eruption is just commencing to appear. The drug will be rapidly increased up to five grains a day in an endeavor to prevent involvement of the central nervous system.

"There are some peculiarities about the locality of the primary lesion in these syphilitic infections that lead to very serious sequelae. When the chancre involves the prepuce, the central nervous system is invaded much later than when the chancre is situated in the rich vascular tissue of the urethra. For instance, if in the presence of gonorrhea a chancre develops in the urethra, the syphilitic infection is by far more liable to involve the central nervous system early. So common is this that we never analyze a case of this class with a history of gonorrhea without exacting all the details of the attack, if there is anything in the patient's make-up that arouses a suspicion of syphilis, because when the chancre locates in the urethra, the spirochetes never of themselves give rise to the pronounced lymphatic infection and the adenopathies. Furthermore, the cutaneous eruption is conspicuous by its absence. Patients with the urethral portal of entry never have alopecia as a secondary sign. Why? Because with a specific infection of the urethra the spirochetes enter the bloodstream directly, and not through the lymphatics to the bloodstream. The anatomic reason is that the urethra has no submucosa: it has a basement membrane, but no submucosa. It has just a vascular network on the corpus spongiosum, so that the spirochetes enter the blood directly, and the syphilitic infection first manifests itself by a central nervous system lesion. For example, we had a man here the other day from Albuquerque, New Mexico, who positively denied any infection, but who had a urethral discharge which had been prolonged, but at no time profuse. Get the idea!—prolonged, but not profuse: it was the urethral spirochetic infection that caused the slight discharge and minimal irritation, which continued for a long time. He came in with a cerebral thrombosis developing after an epileptic attack. He gave a quadruple plus Wassermann, without anything at all suggestive in the history. Think of it! This emphasizes the clinical course of primary urethral chancre infections.

"VISITING DOCTOR: How long after the appearance of the initial lesion do you give the sodium cacodylate?

—4
"DOCTOR MURPHY: I give the sodium cacodylate immediately after the appearance of the initial lesion, and keep it up until the external manifestations have entirely disappeared—two weeks, three weeks, four weeks. First we commence with two grains once a week, always starting with the smaller

doses. Why? Because some patients have an idiosyncrasy to arsenic. This has been known as long as arsenic has been known. If the idiosyncrasy is marked, it gives the patient the garlic breath. If there is no idiosyncrasy, the drug is pushed up to five grains.

"The sodium cacodylate is marketed in ampules. We never mix it ourselves, and never let the druggist mix it. We have not given it intravenously: perhaps that will be done. Nothing is more beautiful than the healing of a chancre by sodium cacodylate. We used it before we had '606.' In one of my original articles I cited the case of a girl who had been infected from a drinking-cup, developing a chancre on the lip, which, under sodium cacodylate, healed completely in eleven days.

"If we can cure the primary lesion in six, eight, or ten days, the syphilis problem is mastered. Why? Because the danger of transmission is thereby minimized. It is from the primary lesion and the secondary manifestations and discharges that contagions occur. We can have the chancre patients arrested and detained in the hospital for a week or ten days, but they cannot be forced to quit business for twelve weeks or more, as was necessary for healing in the old treatment. That is the way the problem is going to be solved.

"The question as to whether sodium cacodylate permanently cures each individual is not so paramount as the knowledge that it is the factor that puts him in dry-dock while the danger of transmission is active. It is the healing of the primary sore that stops the transmission and that can be done very readily."

A CONGRATULATORY LETTER. SALVARSAN AND SODIUM CACODYLATE

Whenever I receive the pink slip with my journal I always feel much as I do when I have a very serious patient—that I am afraid I am going to lose a friend. However, there is one redeeming feature about the journal—I can call it back to life with the necessary "long green." I want to say that *CLINICAL MEDICINE* for May was a "headliner."

In your editorial "Making the Patient Comfortable" you have spoken a world of truth. Every young man should have a copy of this article, and some of the old men that I know need it badly.

Since salvarsan is not obtainable I have

been using sodium cacodylate and have had some marvelous results.

In the injection treatment for hemorrhoids, Doctor Morley makes it plain enough for almost any tyro to tackle the operation. I have used the same method for more than three years and find it all that is claimed, and I agree with Doctor Morley that it is not used enough by the regular men and the patients drift into the hands of the quack who is shrewd enough to realize the value of the method.

I am not trying to write a paper nor to be a critic, but I must let you know how much I appreciate *CLINICAL MEDICINE*. I have heard it said that even an editor needs encouragement. All in all, the May number is the best yet. I have never seen so much that is helpful in one number before.

H. D. LEH.

Lancaster, Pa.

SODIUM CACODYLATE: THE QUESTION OF PRIORITY

I notice in your valuable journal of May, 1916, you give credit to certain Chicago men because of their clinical priority in the use of sodium cacodylate in syphilis.

Some years ago I had the pleasure of receiving a letter from Doctor Spivak of Philadelphia, congratulating me because of my priority in publishing a few sentences upon this valuable drug in syphilis in your journal—about 1908 I think. Doctor Spivak at that time, he gave me to understand, had about 80 cases upon which to report. I did not have that number.

With all due respect to Dr. John B. Murphy *et al.* I am sure you have "slipped a cog" in proper recognition both as to originality and priority.

According to Doctor Spivak, I am quite sure I did mention the use of sodium cacodylate in syphilis prior to its recommendation by Doctor Murphy.

W. C. GREENWALD.

Cleveland, Ohio.

[Doctor Greenwald's brief article in *CLINICAL MEDICINE*, to which he refers in this letter, was published in the issue of May, 1910, page 546. On referring to this I find that he speaks of Murphy's prior employment of sodium cacodylate, which led him to try the remedy in one case. This seems to settle the question. Doctor Greenwald's article was certainly the first on the topic appearing in this journal, and one of the first

published in America. Since it appeared a large number of clinicians have been working with this arsenical salt.—ED.]

BATHING THE PATIENT IN BED

On this page of CLINICAL MEDICINE, we are reproducing a photograph which appeared originally in *The Nurse*; this being one of a group of pictures, printed in that excellent publication, which illustrate the method of bathing a patient in bed. We show it here, because we believe physicians should know more about the practical "kinks" of nursing, especially since—in country districts at least—many physicians have no trained nursing-help available.

As you may see by this photograph, special bathing facilities are not necessary in order to give a patient sick with typhoid fever or any other serious illness a full tub-bath. In fact, this bath can actually be given in the patient's own bed. All that is necessary is, a rubber sheet, which with a little ingenuity can be placed under the patient without his being lifted out of bed, then the edges can be raised by putting under this rubber sheet rolls of blankets, so that the patient will lie in the depressed portion, with high edges all around, as shown in the picture. Then the bed can be filled up with water of the desired temperature. In this position, also a sponge-

bath or spray can be applied, as shown in this picture. When giving a cold bath, it should be remembered that friction should always be applied. Cold compresses are usually applied to the head.

THE INJECTION TREATMENT OF HEMORRHOIDS

CLINICAL MEDICINE is one of the most practical and helpful medical periodicals in circulation, and I find many splendid articles therein.

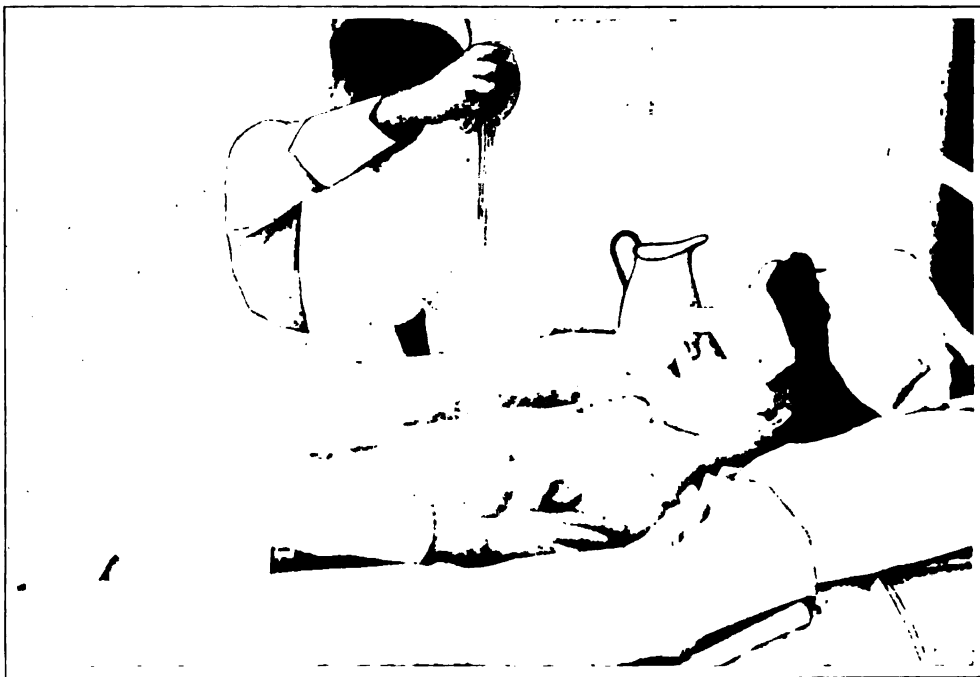
Since there is such an interesting discussion of the injection method for the treatment of hemorrhoids, I wish to say that it is a splendid method. To learn all about its precautions and its origin it is well to get the book by Dr. W. P. Agnew of San Francisco. It tells all about it.

G. C. WILKE.

Fort Collins, Colo.

[We have been much impressed by the revival of interest in this method of treatment in England. An abstract of another article on this topic will be found in the "What Others are Doing" department, this issue. See page 521.

Doctor Agnew's book on "Hemorrhoids and Other Rectal Diseases," to which Doctor Wilke refers, was published about twenty-five



Showing How Patients May be Bathed in Bed

years ago, and we believe is now out of print. We have a copy in our library, which we value highly, although the technic of the injection treatment has been considerably elaborated, and perhaps improved (this is a matter of opinion) since it was written. Agnew used a 50 percent solution of carbolic acid, his formula being as follows:

Acid. carbol. cryst.....oz. 1
Aqueae dest.....drs. 2
Sod. bitor. et plumb. glyc.....drs. 6

M. Sig.: Solution for hemorrhoids.

The "sod. bitor. et plumb. glyc." in this formula is a mixture of equal parts of lead acetate and borax, two drams of each with one ounce of glycerine. After mixing it must be allowed to stand for twenty-four hours, although solution is facilitated by putting the vial containing the mixture in a water bath. Whether it has any advantage over those used by Morley and others is a matter of opinion; however, most operators now seem to prefer a weaker solution—20 percent phenol seeming to be about the average.—Ed.]

AN EXCELLENT ANTISEPTIC IODINE COMBINATION

In view of the controversy in medical journals regarding the value of antiseptics in the treatment of wounds, I venture to submit to the members of the "family" my formula for an antiseptic combination that I have been using more or less for the last fifteen years.

I triturate in a glass mortar 30 grains of iodine crystals with 1 ounce of phenol-camphor until complete solution is effected and then add 1 ounce of compound tincture of benzoin. Then it is ready for use.

For badly infected sores, I employ this mixture in full strength; however, in milder cases or as a preventive of infection, I dilute it with olive-oil. In chronic indolent sores, such as leg-ulcers, I add balsam of Peru. To make it into an ointment, I evaporate the alcohol from the tincture of benzoin, while for the ointment-base, I use a mixture of 3 parts of woolfat, and 1 part of petrolatum.

The advantage of this combination over Carrel's hypochlorite solution, is that it is more effective as an antiseptic and the effects are of much longer duration. It is absolutely non-poisonous and also nonirritant. It is a superb analgesic and promotes healing better than any other antiseptic I know of.

One strong point in favor of this combination is the protective coating which it affords. The original purpose of adding the compound tincture of benzoin was for this very protec-

tive quality, although I soon discovered that it amazingly improved the healing action of the mixture.

To demonstrate its healing effect, just try it in the following proportions in a case of chronic leg-ulcer:

Iodine crystals.....grs. 30
Phenol-camphor.....oz. 1
Balsam of Peru.....drs. 4
Tincture of benzoin, compound...ozs. 2
Olive-oil, enough to make.....ozs. 6

Directions: Apply once daily on gauze and over it apply an elastic bandage without rubber.

For punctured wounds of the palms of hands and soles of feet, with a sharp knife trim the thick skin down to the quick around the edge of the wound; then with a good medicine-dropper inject a few drops of anesthetic. Clean the wound out with a solution of peroxide of hydrogen, after which inject some of the undiluted iodine-phenol-camphor solution. The wound may then be dressed with the dilute oil mixture, and it will give no trouble whatever. There is no need to fear tetanus.

In cases of small wounds of the face, I make the necessary repair and then paint the wound several times a day with the undiluted solution, leaving it open, without any other dressing. Healing is very rapid, with a minimum of scarring.

In the treatment of crushed and lacerated wounds of the hands and fingers, the preparation can not be excelled, as here its analgesic qualities make it indispensable, after once having been tried.

W. A. MARNER.

Miles, Iowa.

EXPERIENCE WITH THE CURLE TUBERCULOSIS TREATMENT

I wish to tell of my experience with the Curle treatment of tuberculosis. I first tried the method on an important case after I had read about it in the January, 1914, number of CLINICAL MEDICINE. This patient was benefited, and the disease-process stopped.

Recently I have employed the method in a case of tuberculosis of the advanced military type, made worse by pregnancy. The woman was confined February 14, and pursued a downward course from that time on. She died on April 19, a result that I anticipated. In spite of the desperate character of this case, the patient experienced a slight increase of appetite and the looseness of the bowels was checked. She did not last long enough after this treatment was instituted, however, to experience much benefit.

I shall try the Curle treatment again whenever an opportunity presents.

LUTHER WALL.

Slaton, Texas.

[The method of treatment to which Doctor Wall refers was introduced by Doctor David Curle, of Glasgow. The purpose of the treatment is to throw free iodine into the blood of the patient. This is accomplished by giving potassium iodide by the mouth, the dose being 30 grains, administered in 5 ounces of water after breakfast in the morning, washed down with clear water. To break down the potassium iodide in the blood, with release of free iodine, an oxidizing agent is used, chlorine being employed for this purpose. Three to four hours after taking the potassium iodide the patient is given one ounce of freshly prepared chlorine solution diluted with 9-ounces of lemonade. This chlorine lemonade is repeated at two-hour intervals until (as a rule) three doses have been taken. This is the daily treatment.

This method of treatment was highly lauded by Curle, and was praised by Reeve and others. Little has been written about it in this country, and we have received but few reports from our readers, so we are not prepared to praise or condemn. However, we have much faith in iodine. It undoubtedly has distinct value in tuberculosis, and we know of many physicians who have used it in some form—calx iodata, for instance—with much satisfaction. In combination with such remedies as guaiacol, nuclein, and the like, it has seemed to us to promise much. The Curle method of treatment rests upon a perfectly comprehensible hypothesis. If other readers of *CLINICAL MEDICINE* have had experience with it, we shall be glad to hear from them.—Ed.]

A DOUBLE MONSTER

Our old friend Doctor Laura M. Plantz, of Putney, Vermont, has sent us a photograph of a double monster, born in Gallipolis, Ohio, March 20, 1916. The parents were James Beckett, a laborer, age 64, and Nancy Mouring Beckett, age 42. They had twelve children, five of whom are living. The attached twins, whose pictures are shown herewith, were both females, their combined weight was 15 1-2 pounds, and they lived about twenty minutes. Doctor G. A. Mack, who attended the mother, wrote as follows:

"The chests were separate, the abdominal organs coalescing, particularly the livers

and stomachs, forming one liver and one stomach for both. The mother made a nice recovery, and was out of bed on the ninth day."

DOCTOR BOWERS' BOOKS FREE

Send 8 cents in postage stamps and receive free copies of two valuable books, one on "Diet" and one on "Beauty," which Doctor Bowers has written for *The Associated Sunday Magazine*. These books would ordinarily sell for 50 or 75 cents apiece. Address Bruce Barton, Editor *Every Week* magazine, 95 Madison Avenue, New York City.

NASAL OBSTRUCTION: RISING TO THE EMERGENCY

Several days ago, a man in an excited condition hurried into my office and reported that his little son had a button stuck in one of his nostrils. Immediately I was reminded of an experience I had about twenty years ago. At that time, I was in a drugstore when I was called to see a child, about three years of age, troubled in the same way. Looking up the child's right nostril, I discovered there a shoe-button firmly impacted, but could not remove it in the usual way. So, I told the father to hold the child in his arms while one



A Double Monstrosity

of my friends held its head. Then I pinched the child so that it cried lustily, whereupon I applied my mouth to the child's mouth and vigorously blew into it, with the result that the button flew out from the nose.

Remembering this experience, I submitted this child to the same treatment and promptly secured the same result. This child had a similar experience about a year before, but, as I was not at home, the father went for a local colleague who specialized in diseases of the eye, ear, and nose. He failed to remove the button, whereupon the family took the child to their own physician in New York. That gentleman etherized the infant and pushed the button back into the pharynx.

There is a knack in "doing things" without instruments. I have exercised a similar knack in examining the vagina. I have used a large tablespoon, bending it so as to make it a very passable speculum.

A. J. ANDERSON.

Astoria, N. Y.

THAT UNFORTUNATE ADDICT

Concerning the case of the unfortunate physician referred to, by "H., Missouri," in the May number of *CLINICAL MEDICINE*, there is only one course for him to pursue. He should go to the Internal-Revenue Collector of his district, state his case as it is, and get permission to use whatever amount of morphine is necessary. This permission will be granted. The amount of the drug necessary to hold him in comfort will not have to be increased, and he will improve in health and possibly be able to return to his work once more.

It is a great mistake to withdraw the drug from these chronic addicts. The Harrison antinarcotic law was not designed to apply to this class of cases, but to prevent the illegal sale of narcotic drugs and prevent the making of new addicts. It is being enforced in a thoroughgoing manner, and will, in one generation, wipe out the wrongful use of the drugs named in the measure. If it could be applied to the sale of alcohol and tobacco, it would go far toward checking the degeneration of the race that is shown to be going on in all the highly civilized (?) countries.

I have a woman patient who has been using morphine for 41 years, beginning, at the age of 14, for a chronic affection. She came under my care seventeen years ago and at that time was taking about 600 grains of morphine each month. I reduced the amount gradually to 480 grains, which was the least

that would hold her in comfort. During these seventeen years, this woman has never asked to have the amount increased. She has been able to attend to her family and social duties and today, at the age of 55, is in fairly good health.

CHARLES G. PURDY.

New York, N. Y.

DEPARTMENT OF EXTENSION

The doctor often finds himself confronted by the duty of instructing his patients concerning the preliminary care, the management, and the after-care of the isolation-room. A great deal of time is consumed in imparting this instruction to the patient or attendant. The following article will conserve the physician's time. More important, however, is the fact that it will increase the efficiency of management of the case. No matter how well the doctor may explain the details of sanitary conduct of the quarantine, the patient may fail to grasp the instructions.

These printed instructions (which may be reprinted in leaflet form by anyone) enable the doctor to avoid omitting essentials, they guarantee that the patient will not forget, and they save time.

Care of the Sick-Room, and How to Fumigate It

It is prudent to disinfect or at least cleanse every sick-room at the termination of the illness. The method used must be decided upon by the physician, who can take into account the nature of the disease. If the room and its furnishings have been selected with foresight, the removal of all danger of contagion is a simple matter. It is, therefore, wise to anticipate the day of fumigation by contriving that the sick-room shall contain nothing that is hard to disinfect and be located appropriately.

While the law does not require a quarantine in the case of all communicable diseases, the directions given below are intended for the quarantined sick-room or isolation-room.

The room selected for the patient should be as remote as possible from the other used portions of the house—a room at the end of a hall or off in an "L" is suitable.

The patient often is able to wait on himself, especially during the latter part of the convalescence. As a rule, however, an attendant, preferably a trained nurse, is required. Since the patient and attendant must remain in the isolated room at all times, it is highly advisable to have a bath-room adjacent to the sick-room.

The floor and walls of the room should be bare, and no curtains should be used except washable ones. Upholstered furniture and cushions should be eschewed. The room should be capable of being closed tight; hence, rooms opening off through open archways into others rooms are not appropriate.

It depresses a patient to listen to a discussion as to where or how he is to be isolated. In his

hearing, conversation should be limited, if possible, to a discussion of how to make him comfortable, rather than how to protect the health of others.

Even during isolation, it is necessary to arrange for the ingress and egress of certain essentials. Food can be carried on a tray or plate. After meals, the tray can be placed by the nurse in a dishpan left for the purpose outside near the door. The dishpan can then be filled with water and set on the stove; and after the water boils the utensils may be handled safely.

The well members of the family should not use the bath-room adjacent to the sick-room. In small households, where there is only one bath-room, it can, by proper precautions, be made to serve. The seat of the toilet should be washed with an antiseptic solution after being used. The tub should be reserved either for the sick or for the well. All who enter the bath-room should regard it as neutral territory and should carefully avoid touching anything with the fingers.

The sick-room should be cleansed by some dustless method. Mopping the floor with a mop wrung out of antiseptic solution is one satisfactory way of cleaning the floor. The furniture, door-knobs, window-sill, and the accessible portions of the woodwork should be rubbed with an oiled rag or with a rag moistened with an antiseptic solution. Cloths moist with kerosene are excellent.

The bed-linen should be removed with the minimum amount of waving through the air, and, together with the personal linen, should be placed into a clean pillow-slip. The laundryman or wash-woman should be instructed to soak the pillow-slip in boiling water for five minutes before removing its contents.

The antiseptic solution used for wiping off chairs, doorknobs, etc., should be one of the following: Corrosive-sublimate solution, 7 grains to 1 quart of water; solution of pure carbolic acid, 2 teaspoonfuls to 1 pint of water; kresol solution, 2 teaspoonfuls to 1 pint of water; formaldehyde solution, 3 teaspoonfuls to 1 pint. Either of these solutions is effective. The bichloride solution is odorless, but poisonous. The formaldehyde solution irritates the eyes and should not be used in the sick-room. The kresol solution has some odor.

When the day for releasing the quarantine arrives, the fumigation can be conducted with very little difficulty if the foregoing instructions have been carried out.

The patient's clean clothing should be placed outside the sick-room. The patient should then take a careful sponge-bath with a corrosive-sublimate solution of 7 grains to the quart of water. The hair should be thoroughly soaked in this solution. The entire body should then be rinsed off in pure water. The patient, leaving the sick-room without touching anything, should put on clean clothing, then go where he will.

The nurse or the attendant should then attend to the disinfection or purifying of the room by one of the several methods given below. The selection of the chemical to be used should, of course, be left to the physician; but, regardless of which chemical is used, the room should be prepared for fumigation as follows:

The floors should be mopped thoroughly with corrosive-sublimate solution (7 grains to the quart of water). The mattress should be wiped with a rag wrung out of this same solution. The blankets should be hung on lines or on the bed, so that they hang free of folds and wrinkles. The closet-door

should be opened and the dresser-drawers pulled out, and all articles of clothing hung up on lines. Furniture and woodwork should be gone over with a cloth wrung out of the bichloride solution mentioned above. The floor should be sprinkled with water. Books are not easily disinfected, and they should not be used after having been in the isolated room. Valuable books, however, need not be destroyed, but should be disinfected in a small airtight box, by means of a concentrated vapor. The book should be stood on end and the leaves separated one from the other.

Before starting the fumigation, the room should be made as nearly as possible airtight. Wetted strips of newspaper 6 inches wide will adhere over the cracks around the windows and doors. Chimneys can be stopped by stuffing in newspapers. Keyholes can be stopped with cotton. The chemicals chosen by the doctor should be at hand ready to release the vapors for fumigation. Either one of the following may be used:

1. Solidified formaldehyde method.—This is economical and safe, but only reliable goods should be used, preferably those endorsed by the state board of health. To ascertain the cubic capacity of the room, multiply the length and breadth of the room (expressed in feet); then multiply this product by the height of the ceiling (expressed in feet). The result will be the number of cubic feet in the room. Place the formaldehyde-lamp of the required size in a tin or iron pan on a brick near the center of the room. Light it, then leave the room at once, closing the door behind. Seal all cracks around the door with strips of wetted newspaper. Leave the room closed for six or eight hours, then open the doors and windows and air the room for at least twelve hours before occupying it.

2. Permanganate-formaldehyde method.—Reliable, but expensive. It takes 6 1-2 ounces of permanganate of potassium and one pint of 40-percent solution of formaldehyde for each 1000 cubic feet of air space. After calculating this, as described above, place the required amount of formaldehyde in a large metal bucket, can or small tub capable of holding 8 times the quantity of formaldehyde used. Support this bucket or tub on two bricks near the middle of the room. Prepare for a hurried departure. Then pour the permanganate into the formaldehyde-solution, get out quickly, shut the door behind you, then seal with strips of wetted newspaper. Leave the room sealed for six or eight hours. Then open doors and windows and air the room for twelve hours, or until all irritating fumes have disappeared, before occupying it.

3. Sulphur method.—This is cheap, but the sulphur fumes bleach fabrics and tarnish metal objects, such as picture-frames, brass beds, etc. Calculate as above the cubic capacity of the room. Use 5 pounds of roll sulphur to each 1000 feet of air space. Place the sulphur into one or more ordinary iron pots supported by bricks. Pour half a teacupful of wood-alcohol over the sulphur, ignite with a match. Leave the room at once, and seal the door with strips of wetted paper. Leave the room closed for six or eight hours, then open doors and windows and air the room for twelve hours before occupying it.

The attendant should take a bichloride-solution bath as described for the patient. This can be done either just before mixing the chemicals and starting the fumigation, or it may be done outside the sick-room and the clothing placed in a clean pillow-case, to remain unhandled till boiled.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

A FEW talented physicians in the United States are endeavoring to show the people how the best health can be secured and maintained and how the everyday ailments of life can often be prevented or cured by good and careful living. Good and careful living, of course, includes all such subjects as diet, personal habits, clothing, exercise, work, play, rest, recreation, and so on; and now, in addition to his excellent works on sex-hygiene, Dr. William Lee Howard, through his publisher, Edward J. Clode of New York, brings out one of the most practical and interesting books I have had the pleasure of reading, entitled, "Breathe and Be Well." Doctor Howard says, in his foreword:

"Optimism means to me humanity. To be impatient with humanity, is stupid pessimism. I have no warfare against those who have neglected their latent physical forces, but an urgent desire to show them how to use and conserve these powers and forces. The general public are not upon familiar terms with their bodies. They are better acquainted with diseases than with health. Poor health, in distinction from disease, is almost invariably due to lack of understanding that the body is a machine which must have proper fuel for combustion, and its boilers, pipes, and exhausts must always be kept clean—that oxygen must be supplied in sufficient quantity, must burn up waste material every living minute as well as supply energy and new living stuff. The secret is, in knowing how to enlarge the combustion-chambers and control intake and outgo."

How true is the saying of Doctor Howard: "The general public are not upon familiar terms with their bodies. They are often better acquainted with diseases than with health!"

Many contributions by physicians to newspapers and magazines describe the signs and symptoms of diseases, leaving as untoward suggestions on the layman's mind as will a patent-medicine advertisement. And it is refreshing to read a book so full of common sense and practical value as this work of

Doctor Howard's. No gruesome, terrifying descriptions of diseases that should be discussed only in the seclusion of a doctor's office, but simple rules, which, if followed, will aid mightily in keeping a person from getting sick.

"There is scarcely a disease that does not have its enemy in the blood or lymph—an enemy ready to war and overthrow the host of disease-germs," writes Doctor Howard, "but, unless the roads and passes are clear and ready to the remotest organ or vessel, they cannot do their allotted work. Just because man has not kept clean and free the highways and byways in the body for his internal allies to march over when called, is the cause of disease. And these highways and byways for the host of fighting bodies to rush over only can be kept clear and free by knowing how to breathe."

One is reminded of the truth and force of Doctor Abbott's slogan: "Clean out, clean up, and keep clean."

It is not so much science that is needed to keep well and prolong life, as is the following of a few simple common-sense rules.

In "Breathe and Be Well," there are the following chapters, all free from physiological explanations and technical terms and details, but simply worded, understandable, and interesting.

1. General observations upon health.
2. The morning fresh-air cocktail.—The nightcap.—How to breathe them in.
3. The little things that prevent proper breathing.
4. Snoring: The cause and cures.
5. Breathing for beauty.—Breathing and eating.
6. Breathing through the skin necessary for health.
7. New tissues for old.—Rejuvenating the body and skin.
8. Some simple breathing-exercises.

There is much more to this book than one would judge from its title. The book closes

with a quotation from the Sanskrit, answering the question, "What is Life?" He says:

"Life is the interval between one breath and another—he who only half breathes only half lives, but he who uses nature's rhythm in breathing has control over every function of his being."

After reading Doctor Howard's book, one can readily believe that the old philosopher who wrote the foregoing words was right.

Biliousness, dyspepsia, neuralgia, nervousness occasion, perhaps, three-fourths of all the sufferings endured in civilized society, all arising from chronic ailments; that is, ailments which last for months and years, sometimes being better, sometimes worse. It is almost impossible to enter any household and not find one or more of its members suffering to a greater or less extent from one of the forms of sickness named.

It has been shown indisputably that, although the effects of these four ailments are very different, the immediate cause is in the blood—blood which is imperfect, impure, unnatural to the system, and, hence, must injure it; the cause being one, however different may be the effects in different constitutions. That cause must be removed, as an essential and the very first step toward a cure; and its removal must be followed, sooner or later, by the disappearance of the effects in all cases where these effects have not been allowed to remain long enough to produce actual disorganization of some of the parts affected or long enough to exhaust their vitality, their power of recuperation, such as cancer of the stomach, the liver, the bowels or other part connected with the digestive process.

Then, again, the cause being one, the method of removal will apply to each of the four ailments named, although this removal of the one cause may be accomplished in various ways. In other words, if "bad blood" causes biliousness, dyspepsia, neuralgia, nervousness, these maladies, as also their effects, will be removed by whatever rectifies this bad blood; that is, it removes and supplies a good, pure, healthful, and life-giving material in its stead.

Bad blood is unnatural to the body; it is essentially a foreign body; and it is physiologically impossible to introduce a foreign body into the living human body without its making instinctive efforts to cast that foreign body out of itself, and it always

puts forth all the power it is capable of exerting to effect such a result. Not only so, but it is beautiful to contemplate that, when a foreign body is introduced into the system or when anything in it becomes foreign—such as impure air or food of which it can not make a healthful use, by reason of its being improper in quality or quantity—the system seems to become alarmed and, ceasing some of its ordinary work, it concentrates its energies toward the removal of this foreign body, this internal enemy.

For example, if a man eats too much, he either becomes "sick at stomach" and nature summons all its energy to enable him to vomit it up and cast it out in disgust or, drawing fluids from certain reservoirs of the system, dashes them in upon the bowels in unusual quantities, to flood away the offending mass, and in this we have the friendly diarrhea, which many ignorantly "stop" and thus oftentimes thwart nature, and by so doing destroy life in a few days. There is something similar in the intelligence of the little busy bee when any "foreigner" enters its hive.

In the case of the human body, it has already been shown that, when anything foreign is to be excluded, ordinary work is suspended until the work of exclusion is completed; hence, the weakness which follows diarrhea and many other forms of disease; it is because nature has summoned extra efforts to its aid, that it requires rest, and time for recuperation. Our highest wisdom in the treatment of all diseases is, to discover what nature wants to do, then to help it in the work and finally to do what is possible to recover from the greater or less exhaustion occasioned by the extra efforts toward protecting, defending, and recovering its normal strength.

When food has become a foreign body in the stomach, by its remaining there undigested, the appetite is taken away, as if nature foresaw that its strength ought to be husbanded, for the purpose of being extended on the extrusion; instead of asking for more food, which would require additional power for digestion. It seems as if a living and reasoning intelligence were being called into requisition in these cases, in so beautifully and wisely adapting the means to the end.

In reference to the existence of bad blood in the body as foreign matter, two things are

essentially necessary to the recovery of health, as has already been explained. First, the bad blood must be got rid of; second, a pure material must be substituted.

It has also been shown to be a ruling principle in the living organism that, when there is any foreign substance in the body, the action of every limb and muscle and fiber tends to work and push that foreign substance outward, whether it be undigested food, a bullet, a needle or bad blood; for, all are alike unnatural and foreign. Hence it seems to follow naturally that, as a means of helping nature, we should increase the action of limb, and muscle and fiber, by going to work, if you please—in moderation, of course; or, in the event of having nothing to do, to take certain exercises. And, as the muddiest spring will run itself clear, so the body will clear itself of its bad blood, in most cases, if not interfered with, by means even of involuntary motions and operations of its internal machinery; but much sooner if these involuntary movements are aided by voluntary exercise in the open air and proper breathing, as recommended by Doctor Howard.

And, if these things work the bad blood of biliousness out of the system, they will do the same thing in the case of many other ailments—showing that there is a certain unity in disease as well as a unity in the means of cure.

There is a great variety of ailments, an infinitude of combinations of symptoms, which would appear hopelessly complicated; but to the professional mind they are promptly classified and often traced to a single cause—to the wrong action or the want of action in a single organ. However, by rectifying that condition, a host of symptoms will promptly disappear. Hence, the cause may be one, the effects various; but the one remedy, by removing the one cause, may cure a dozen or more of the symptoms of the one disease.

It is the physician's duty to enlighten the public regarding every phase of hygienic living.

Marfan, in a very fine leaflet devoted to the etiology of mental work, has well analyzed social influence. "In contemporary society," he wrote, "the frequency and intensity of mental work increases daily. In the surroundings in which we live everything contributes to fatigue of the brain." Then he shows how the progress of individualism and the spread of education have enlarged ambi-

tion, and he emphasizes the pernicious influence of competition. "The multiplicity of competitions enables us to attain a position through competition only at an advanced age, which involved a prolonged effort, useless and barren for society." He attributes an important role to the development of printing, to the daily papers and to novels, which multiply the emotions and irritate the sensibility." And he concludes: "In subjects exhausted by heredity, these social conditions generate a variety of morbid conditions, especially neuroses and insanity." Camus and Pagniez, of France, have gone into this subject fully, and they write as follows:

"It is very difficult to indicate the prophylaxis for such conditions; but, if it is impossible to regulate individual work, nevertheless, general measures can be taken to decrease overwork, principally by aid of government and large corporations. Efforts have been made with this end in view, and it is to be hoped that they will completely succeed, for, it involves a matter of general interest. Among the laboring classes, the overwork that is forced upon them is frequently a cause of nervousness, directly for those subjected to it and indirectly to children.

"Working women who have been treated in the wards of Pinel have afforded us many sad examples. During certain periods of the year, these unfortunates were obliged to work a great part of the night and their meals were frequently very irregular; we know some who were obliged to lunch sometimes at one o'clock, sometimes at three, and frequently without interrupting their work; others left their workshops at nine o'clock in the evening, returning home without having dined. Exhausted from fatigue, they did not have courage to prepare the evening meal and went to bed, taking a little cold food. They could not long resist this anti-hygienic existence. Upon the advice of parents or friends, they changed their position, but it did not take them long to perceive that their condition was not improved. They were certainly free to accept or refuse offers of work, but it is a poor freedom which permits them to choose between misery and overwork. Their consent to this excessive fatigue does not make it legitimate, any more than voluntary slavery makes slavery legal.

"So, we, with many others, emphasize the influence for harm of overwork. This is not a digression; it belongs to medicine, pure and simple. When a physician is studying a disease, and recognizes the cause of the disorder, he should make it known and point out, if

he can, where the danger lies. That is all that we have done."

The physician, if he is a real physician and not simply a salaried man, must first endeavor to destroy the conditions which render his influence useless. He should act in behalf of the improvement of society, in the largest sense of the word, and not be content with showing the way; he should struggle ceaselessly and find a method of realizing the reforms he judges indispensable.

The first antialcoholic campaigns were received with smiles, and physicians themselves, well instructed regarding the ravages of alcohol the effects of which they see daily, did not regard the antialcoholic propaganda without a certain skepticism. Nevertheless, some of them undertook to direct the movement, and their efforts have been so successful that in certain countries alcoholism has been checked.

Overwork is a question quite as medical as alcoholism. The human organism, we have seen, may be compared in a certain way to an engine. The physiologist studies the combustion and the product; he estimates the quantity of food necessary for a given work, and when the work is increased he observes that the organism uses its own substance. The physician ascertains the effects upon the individual and on his posterity, and it is for him to say that the organism is working too much and it is bad.

Mosso, in his physiological study of fatigue, states that the division of work among men is too unequal and there is danger in this inequality both for the individual and for the race. "That does not concern," said he, "a question of party or a method of agitation; it is a profound conviction, a sacred sentiment of lofty morality which urges methods of studying the means for an equal division of property, without violence, without the shedding of blood, so that work might accord with the laws which govern humanity, so that the workman should not become the slave and be used up by fatigue, so that the human race should not degenerate."

These ideas are not new, but never has there been greater need to repeat them than in our epoch. They should be repeated by physicians and to physicians. The medical man's role in society is an important one. It is as if what he wishes may come to pass. His voice is always listened to. Perhaps he will succeed in solving in the name of hygiene and science what others from time immemorial

have tried to solve in the name of justice and altruism, in appealing with varied fortune to kindness or force.

Another point to be spoken of is work and rest.

Both business and professional men must realize that it is better to regulate their daily tasks with some regard for their nervous systems than to burden themselves with nerve-racking work for weeks and months until they are forced to take a rest. They ought to make it a rule to rest a little whenever an important task is accomplished, particularly after they have gone through a severe nervous strain. This applies to mental as well as physical work. Our strenuous life makes this imperative.

If we save our nerves from overstrain, we are well equipped to shoulder its burden. It is the only way to counteract the severe nervous strain and responsibility entailed by some vocations. This advice will seem rational, no doubt, yet its efficacy depends on the exercise of a firm will, and that again depends on healthy nerves.

All changes from rest to activity or activity to rest, writes Dr. Meylan, medical director of the gymnasium of Columbia University, are made slowly when nature is allowed to have its own way. Attempts to change suddenly from inactivity to vigorous muscular work bring on severe distress of the circulation and respiration; rapid eating after a long fast inevitably results in acute indigestion; sudden awakening from sound sleep causes general discomfort; an abrupt change of temperature, such as occurs when jumping into cold water, usually brings on muscle cramps and occasionally causes sudden death.

Judicious regard for this physiological law is essential to physical well-being and efficiency. The common practice of taking a cold plunge-bath immediately after rising is absolutely contrary to the laws of physiology and hygiene. The effect of the cold water is, to stimulate all the body-functions to sudden and vigorous activity and also to dissipate temporarily the sensations of leftover fatigue not removed by sufficient rest. The exhilaration produced by the bath accelerates the expenditure of nervous energy for a few hours, but is followed by a reaction in the form of lassitude and depression. It is far better to allow the various body-functions to change gradually from the relative inactivity of sleep to the full capacity of work.

(To be continued)

Among the Books

HERTZLER: "SURGICAL OPERATIONS WITH LOCAL ANESTHESIA"

Surgical Operations with Local Anesthesia. By Arthur E. Hertzler, M. D. Second Edition. New York: Surgery Publishing Company. 1916. Price \$3.00.

For the general practitioner this is one of the most useful surgical books with which we are familiar. It is a volume to which every physician who owns a copy is sure to resort for information almost daily. No wonder that a new and larger edition has been demanded.

The first two chapters of Doctor Hertzler's book are devoted to a discussion of the drugs employed for the production of local anesthesia and the technic of their administration. Most attention is given to the use of cocaine, quinine and urea hydrochloride and novocaine, although other anesthetic agents, such as astovaine, beta-eucaine, tropacocaine, and the like, are referred to briefly. In the discussion of the technic, details are given with great care. Not only is the physician told the strength of solution necessary, the syringes to be used, and how they are used, but he is also instructed as to the dangers of too concentrated solutions and of the symptoms of toxicity.

Naturally, a very large portion of the book is devoted to a discussion of the operations to be performed under local anesthesia, and the physician is told just how and where to use his anesthetic solution in the management of these cases. The book is one which can be heartily recommended, and it certainly deserves a very large sale.

"DIGS AT DOC"

Digs at Doc and Others. A Collection of Funny Sayings, Principally About the Doctor and His Profession. With 42 original cartoons by R. J. Bieger. Perth Amboy, N. J.: The Perth Amboy Evening News Co. Price \$1.00.

I will let you into a secret. This volume is made up of jokes, mainly about the doctor and his problems, and is collected by a good friend of many of the readers of this journal,

Mr. B. L. Maltbie, former editor of *The Physicians' Drug News*, and president of the Maltbie Chemical Company. There are a lot of things in this little book which will tickle your funny bone, and the illustrations by Bieger are mighty clever.

"EAT AND GROW THIN"

Eat and Grow Thin. The Mahdah Menus. With a Preface by Vance Thompson. New York: E. P. Dutton & Co. Price \$1.00.

Mr. Thompson's eloquent and witty preface to this book—which, be it noted, fills about half of the book itself—starts off with a discussion of the "tragedy of fat." Fat must, indeed, be a tragedy—why else should, in the last few weeks, this book lead all other nonfictional productions among the "best sellers" of Chicago's bookstores?

And, by the way, not the least of the tragic part of fat is the treatment for getting rid of it, as given in this volume. For, what fat man or fat woman can contemplate the following list of forbidden food without being seized with anguish and horror; to wit: (1) pork and fat meat of all kind; (2) bread, biscuits, crackers, and anything and everything made from wheat, corn, rye, barley, or oats, including the inevitable breakfast-food; (3) rice, macaroni, potatoes, corn, dried beans, lentils; (4) milk, cream, cheese, butter, and everything made from them; (5) olive-oil or grease of any kind; (6) pies, cakes, puddings, pastries, custards; (7) iced creams, sirup-sweetened soda-water; (8) candies, bonbons, sweets; (9) wines, beers, ales, spirits.

Nor does this finish the tragedy. Listen: The fat man is strongly advised not to sleep too much; he must not take naps; must not overeat, even of these few dishes that are permitted; must not drink either with his meals or between the meals; must abstain from all alcoholic beverages; must eat no bread other than gluten-bread, and that only toasted; must shun potatoes; and, finally, whenever he feels inclined to ride in a cab he must reconsider and walk instead.

And these are the things the adiposely over-blessed may cautiously permit himself to eat,

for the purpose of prolonging his dolorous existence in this vale of tears: Lean meat, sea-foods, most kinds of fruit (except the sweet ones), salads (provided they are not made with the proscribed vegetables), besides a long list of green garden-vegetables. Incidentally, this happy personage is permitted to stimulate his jaded appetite with pickles and Worcestershire sauce.

Now, isn't this a pleasant program to mull over?

Mr. Vance Thompson, in his introduction, certainly does paint a harrowing word-picture of the horrors of the fat man's life, as vividly illustrated by this example:

He falls in love. (It is a destiny—like being born, with the sun in Aquarius; always the fat man falls in love.) And this is his bitterest tragedy. He cannot kneel at Beauty's feet, without a derrick to let him down; and a man who goes a-wooing with a derrick looks like a fool. He cannot clasp the dear girl to his heart—for fear of smothering her.

What can the poor man do?

Fierce burn the fires of love within him; but the fiercer they burn, the faster flees the terrified girl—for he looks like a vat of boiling oil; and that is a fearsome thing to fall into. So, wrapped in tallow, the poor lover goes his sebaceous way—wearing his maiden-aunt's bracelet for a ring.

Love is not for him.

INTERNATIONAL CLINICS

International Clinics. Edited by Henry W. Cattell, A. M., M. D. Volume IV, twenty-fifth series, and Volume I, twenty-sixth series. Philadelphia and London: J. B. Lippincott Company. Price \$2.00 per volume.

The first of these volumes opens with an interesting article on "The Coming of Age of Internal Medicine in America," by Sir William Osler, while Henry W. Cattell follows with a celebration of the centenary volume of "International Clinics," the first of which was published in 1891. This volume contains many fine papers. For instance, one by C. C. Douglas on clinical laboratory methods for the general practitioner; one by Brinck on the treatment of internal tuberculosis by means of absorbed light-energy; one on low blood pressure by Potter; one on the irregular heart, by Reilly; one on auto-intoxication, by Walsh; hookworm disease, by Deaderick; visceroptosis, by Hertz, and one on "My Method of Percussion" by Lerch. These are only a few of the many splendid articles in this volume.

Volume I of the twenty-sixth series contains among other papers one on chorea by Mayer and Mayer; one on drug therapy in

cardiovascular diseases, by Satterthwaite; on pellagra, by Tucker; "The Wounded Mind," by Murphy; public health administration, by Trask; prolapse of the genital organs in women, by Byford; inevitable abortion, by Nichols; surgical shock, by Foster; fractures of long bones, by Roberts; together with a general review of medicine for 1915 by Craig and Speese.

We have by no means exhausted the list of excellent articles in these two volumes, which are up to the high standard set by Doctor Cattell.

THOMSON AND MILES: "MANUAL OF SURGERY"

Manual of Surgery. By Alexis Thomson, F. R. C. S. Ed., and Alexander Miles, F. R. C. S. Ed. Volume I (General Surgery) and Volume II (Regional Surgery). Fifth edition, revised and enlarged. With 301 illustrations. London: Henry Frowde and Hodder & Stoughton. 1915. Price \$3.50 per volume.

This manual of surgery is one of the most convenient as well as one of the most comprehensive works upon surgery which have been issued in recent years. One objection to most books on surgery is that they are very large, very heavy—not easy to carry and not convenient to handle. The book by Thomson and Miles is issued in three volumes, each of the ordinary 12mo popular-novel size. They are printed upon relatively thin paper, permitting the inclusion of from 800 to 900 pages in each volume.

Volume I deals with general surgery, volume II with regional surgery, and volume III (which has not yet reached us) with operative surgery. The final volume will give the technical details which are largely omitted from the first two.

For clearness of diction and for accuracy of statement, it is very hard to find a work on surgery which covers the ground more thoroughly than this one. Also, it is exceedingly practical and as nearly up to date as any book of the kind can be. For instance, the chapter on syphilis, in the first volume, describes the use of salvarsan and neosalvarsan, but devotes most attention to the mercurial treatment. More than ordinary attention is paid to the common, everyday surgical diseases with which the general practitioner has to deal. In the chapter upon military surgery, the authors wisely state that "many principles of military surgery are in process of solution and it will only be possible to formulate definite opin-

ions when the varied experiences of the European war have been collated." All things considered, the book is a most worthy one, and it gives us much pleasure to recommend it to our readers.

BOWERS: "SIDE-STEPPING ILL HEALTH"

Side-Stepping Ill Health. By Edwin F. Bowers, M. D. Boston: Little, Brown, and Company. 1916. Price \$1.35.

This is a book for laymen, written by a doctor who has contributed so frequently to the lay magazines that he knows pretty well what the average man wants to know about the ills that our human flesh is heir to. In this book he takes up the common, ordinary, everyday health problems, such as over-eating and under-eating, constipation, coughs and colds and their cause and simple methods of treating them, "that tired feeling," headaches, insomnia, neuralgia, falling hair, too much fat, rheumatism, and common ocular troubles. The chapter entitled "Stamping Out Typhoid" is a brief but well-digested account of the wonderful work accomplished in the United States Army by Major Russell and his associates. Chapter sixteen, "Making Loose Teeth Tight," explains the emetine treatment of pyorrhea. This chapter was published some months ago in *THE AMERICAN JOURNAL OF CLINICAL MEDICINE*, and is therefore known to our readers.

This outline gives in brief some idea of the nature of this interesting volume, which any doctor will read with pleasure and which he can turn over to or recommend to his patients, with the certainty that they will pick up new ideas and come back to him to have them worked out.

It is safe to say that not every doctor will agree with everything which Doctor Bowers says, but he will be a strange man indeed who can not absorb from it many good ideas and much of the stimulation that we all need to enter upon the new and inviting fields of therapy which are constantly opening before us.

WILLIAMS: "LABORATORY METHODS"

Laboratory Methods. With Special Reference to the Needs of the General Practitioner. By B. G. R. Williams, M. D. and E. G. C. Williams, M. D. Third edition. Illustrated with 43 engravings. St. Louis: C. V. Mosby Company. 1915. Price \$2.50.

This is the third edition of Williams' excellent laboratory manual, which is already

so well known to the readers of this journal that it hardly seems necessary to speak another word in its praise. Dr. B. G. R. Williams, one of its authors, has been a very frequent contributor to the pages of *CLINICAL MEDICINE*, and our readers by this time are fully aware of the exceptionally practical character of his contributions. In this volume he eschews theory and describes simple tests whose value has already been determined by careful use in his own laboratory and which can be applied by any general practitioner of intelligence and average skill in his own office.

The book, though small, covers a wide field. In addition to an introductory chapter, giving the details concerning laboratory equipment, it contains chapters on the sputum, bacteriologic diagnosis, examination of the blood, the gastric juice and intestinal contents. He also describes such common tests as the Widal reaction and diazo reaction, tells how to find the treponema pallidum, and gives simple methods of water analysis, and the technic of a private postmortem.

This brief review can only hint at the numerous practical problems dealt with in this volume. In the new edition, presented herewith, the authors have added considerable new material, most of which appears in the appendix.

GILE: "NOSE, THROAT AND EAR"

The Nose, Throat and Ear, Their Functions and Diseases. A Treatise upon the Breath-Road, Food-Road and Accessory Organs. By Ben Clark Gile, M. D. With 131 illustrations, eight of which are printed in colors. Philadelphia: P. Blakison's Son & Co. Price \$2.75.

One serious objection to most of the books dealing with the medical specialties is that they are inclined to be too "scientific," meaning too technical and abstruse. While such books are excellent manuals for men who are already well instructed in diseases of the eye, nose, throat, or genital organs (as the case may be), it is difficult for the general practitioner to get out of them anything of special value to him. Doctor Gile's book is different. While it is written by a specialist, and to some extent for specialists, the author undoubtedly had in mind the requirements of the general practitioner; and, accordingly, he has dealt with the simple expedients, has not overlooked the demands of medicinal therapy, and has given considerable attention to the minor technical details without

which a book of this kind is worthless as an aid to actual treatment.

Armed with Doctor Gile's book, any good physician can get a very fair idea of the apparatus necessary for his special work, and with a little personal instruction can use such apparatus intelligently. The writer was particularly interested in Doctor Gile's list of remedies employed in the usual routine of his practice. It would be to the advantage of any practitioner to provide himself with these remedies and learn how to use them; and this he can easily do if he has a book like this one on hand for reference.

Of course, this book contains the usual details concerning the common laryngological and rhinological operations, but it also contains much that is of value in nonoperative treatment. All things considered, it is certainly one of the best books of this kind ever published for the general practitioner.

WADSWORTH: "POST-MORTEM EXAMINATIONS"

Post-Mortem Examinations. By William S. Wadsworth, M. D. With 304 original illustrations. Philadelphia: W. B. Saunders Company. 1915. Price \$6.00.

There are thousands of physicians in this country who are called upon from time to time to make postmortem examinations; and for that matter any physician may be required to do this at some time and it is essential that he should be prepared to do it with some idea of the information to be obtained, and with some skill in technic. There has been a great need for a volume written by a thoroughly practical man and developing the technical side of the autopsy. Doctor Wadsworth has had the experience, through his long training as coroner's physician to the City of Philadelphia, and that he has technical skill is attested by the masterly way in which he has explained just how autopsies are to be made and just what is to be accomplished thereby. The book is the most beautifully illustrated of the kind which we have ever seen. Merely by an examination of the pictures a man of quick insight can grasp most of the essentials of the art of making an autopsy.

Many pages are devoted to the discussion of instruments, mortuaries, the general and external examination of the body, the dissection, including the primary cut, the opening of the chest, the abdominal exploration, and the routine examination of the viscera. Special regions and organs are taken up and discussed in minutest detail.

There is a splendid chapter upon medicolegal postmortems, in which the author discusses the cause of death, coroner's examinations, medical evidence, exhumation and embalming, and such special topics as abortion, asphyxia, burns, scalds, homicide, insanity, sexual crimes, gunshot wounds—electrical wounds, poisons and the like.

There is also an interesting discussion of the making of photographs, of the repair of the body after a postmortem has been made; and the book concludes with a list of books useful for the men who are required to do postmortem work.

FRENCH: "ACTIVE-PRINCIPLE THERAPEUTICS"

Elements of Active-Principle Therapeutics. By J. M. French, M. D. Chicago: The Abbott Press. 1916. Price 50 cents.

There has been a very pressing need for a small book which would present, in the most direct possible manner, the fundamental essentials of active-principle therapeutics. The task of preparing such a volume has been undertaken by Dr. John M. French, and he has done it splendidly. We fail to see how any man who reads this little volume can fail to be convinced of the advantages of active-principle therapy.

The book begins with a brief story of the development of this method of therapeutics. Next comes a chapter on fundamental laws. This is the heart of the book. It tells why the doctor should use active principles as compared with galenics; why he should employ the "small doses, frequently repeated"; why and how acute diseases may be aborted in their early stages; when single remedies should be used and when the simple combinations; and the importance of beginning early in treating disease. In other chapters Doctor French discusses the *materia medica* of active-principle therapy.

The application of this method of therapeutics is illustrated by detailed descriptions of methods employed in the treatment of pneumonia, typhoid fever, the acute infectious disorders, and some of the chronic maladies.

Aside from its remarkable intrinsic merit, the book is a delightful one to read. It is so small that the physician can finish it in a few hours, and so convenient that it can be carried in the pocket. We are convinced that thousands of readers of *CLINICAL MEDICINE* will in the pocket. We are convinced that thousands of readers of *CLINICAL MEDICINE* will want a copy.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6205.—“Treatment of the Cigaret Habit.” D. E. M., California, asks if we know of an antidote for the cigaret habit? He has tried one plan, that cut the habitue from the use of two packs to two cigarets daily, and, naturally thinks that if the addict could be content with two he should be able to cut out cigarets entirely.

There is, of course, no positively specific treatment, but if a weak silver-nitrate solution, applied topically, in the mouth, is employed conscientiously, the desire for cigarets is materially decreased or lost altogether; in fact, while the action of the drug lasts, it is almost impossible to smoke a cigaret. As a rule, however, the smoker “forgets” to rinse his mouth with the silver-nitrate solution, and as a result a cure is not attained.

The writer has used atropine valerate in fairly full doses with considerable success: a tablet containing xanthoxyloid, gr. 1; atropine valerate, gr. 1-250; cactoid, gr. 1-32; strychnine valerate, gr. 1-128, and nuclein, minims 5, may also be given every three to four hours, with reasonable probability of proving efficacious. At the same time *thorough* elimination should be maintained, and the patient receive iron and other tonics in rather large doses. In nearly every case some digestive combination, with or immediately after meals, is required.

Another excellent plan is to switch the cigaret smoker over to a very mild tobacco and pipe, and gradually decrease the number of pipes. Here, as elsewhere, a great deal depends upon the individual's desire to rid himself of the habit. In some cases the mucous membrane of the throat and nose requires spraying with a mild alkaline antiseptic. It is quite true that a man who only has to smoke two cigarets a day can get along without them entirely, but the point is

that he does not want to do so badly enough.

QUERY 6206.—“Malarial Hematuria,” V. F. S., Texas, reports the case of a boy 14 years old, weighing about 150 pounds, fair, and clear skin and eyes, who is subject to attacks of malarial hematuria. Temperature 101° to 102° F. Suffers no pain, and there is no nausea. He submits sample of urine and asks for diagnosis, prognosis, and treatment. The boy has taken two treatments for hookworm. Worms were found in the stool. Plasmodium malariae are present in blood, and the urine contains staphylococci, streptococci, bacillus coli, red cells (very much destroyed), and albumin to the extent of 18 Grams per liter.

It is quite evident that this little fellow is in bad condition. While he suffers from malarial hematuria, there is also a pus-producing area somewhere. A very careful examination should be made. It is more than likely that there is cystitis. If the doctor will give us a clear idea of general conditions and a short history of the case we shall be in a position to aid him more intelligently. In the mean time, we would be inclined to give one or two injections of emetine hydrochloride. This drug has proven efficacious not only in malarial hematuria but also in hemoglobinuria.

It is quite evident that arbutin and hexamethylenamine (with hamameloid probably) are indicated. Quinine must be given with care. The patient must be very carefully dieted, and do not forget that barley water or other mucilaginous beverage should be consumed freely. Be sure to state the morning and evening temperature. Upon receipt of clearer clinical data, we shall be in a position to make further and more definite suggestions.

QUERY 6207.—"Cerebral Hemorrhage." J. W. S., North Carolina, reports the following case: Male age 57, farmer, temperate. No specific disease, hard manual worker; 6 feet high and weighs 150 pounds. Good habits. Married. Attacked about three months ago with slight form of hemiplegia of left side. This was slight, and he was able to use his feet and hands in a few days and to walk as usual. However, the pupil of his eyes contracted to pinpoint size, and he cannot see well. There is a numbness of his arm and hand that requires rubbing to relieve. He has pain on top of his head that annoys him and is sometimes sharp momentarily. During these attacks there is twitching of the muscles of the face. His tongue and speech are not affected. He has been treated by two other physicians. The blood pressure is high. Kidneys and bowels natural in action.

The symptoms are decidedly peculiar, but apparently point to localized intracranial pressure presumably resulting from cerebral hemorrhage. The main thing is to ascertain the character, cause and exact location of the lesion. The reflexes should be carefully tested and the ocular fundus examined. Ascertain if the slight hemiplegia came on after unusual exertion or profuse sweating followed by chilling of the body. Also a Wassermann reaction should be made to determine the presence or absence of syphilis.

Also a specimen of the patient's urine (four ounces from the twenty-four hour output, stating total quantity voided) should be examined. In the meantime, eliminate thoroughly, and push arsenic iodide in alternation with lecithin, and try to build up the patient.

QUERY 6208.—"Fecal Incontinence". W. S. G., Iowa asks help in the case of a boy 8 years of age, who for several months has not been able to retain the contents of his bowel. The child has been given large doses of bismuth salicylate which is helping to the extent that the stools are getting lumpy, but still there is inability to control evacuation. The boy does not seem to know when the bowels are going to move. Thinking some intestinal parasite might be a causative factor the doctor submitted a sample of feces for examination, but no parasites were found. There were many triple phosphates, a few pus cells, and a moderate amount of squamous epithelium.

We suggest giving two or three copious enemata of a solution of the sulphocarbolates;

then a few *small* divided doses of calomel, podophyllin and bilein, followed by some good digestive mixture containing pepsin, fifteen minutes before meals; dilute phosphoric acid, ten drops with water (sweetened if desired) with meals and pancreatin and papayotin, in combination, an hour after eating; midway between meals brucine and berberine, small doses. Have the boy wear a flannel band. Each night before he retires instruct his mother to massage the abdomen with a little warm olive oil, making a circular motion following the course of the colon.

The cause of the incontinence we are unable to determine from the evidence submitted. There may be an ulcer in the rectum, or other intestinal lesion; or, there may be some serious trouble of the central nervous system.

QUERY 6209.—"Fate of Urotropin in the Body." V. G. A., Texas. Concerning your somewhat indefinite query, the following facts, briefly stated, probably cover what you wish to be told. Being of comparatively recent determination, they are not as widely known as should be.

The formaldehyde (formalin) is set free from its combination in urotropin (hexamethylenetetramine) only in a medium possessing an *acid* reaction (as measured by the concentration of hydrogen-ions). But this, in the physiologic fluids, is true only for the gastric juice and frequently as to the urine. Consequently, according to P. Hanzlic, who writes in the *Archives of Internal Medicine* for 1913, none of the other normal body-fluids, being alkaline in reaction, is capable of splitting urotropin and thus liberating formaldehyde.

The author quoted also never found any of the pathologic body-fluids of acid reaction, those tested being the urine of diabetics, bile of typhoid liver, edema-sera, tuberculosis pus, ascites, cerebrospinal liquor in lues, tetanus, meningitis, and some others; and these never liberated formaldehyde—which also is true of the alkaline urine of cystitis. Contrarywise, the acid urine (measured by H-ions) in various forms of nephritis and in cystitis invariably set free the hexamethylenamine.

QUERY 6210.—"The Diphtheria Bacillus." J. S. T., Nebraska, propounds the following: "Can a swabbing of the throat of suspected diphtheretic patient be isolated in any way

except by nutrient agar-agar or Loeffler's blood serum? If so, how? Could a swabbing taken late one night be passed upon early next morning without these culture media? Is it possible to isolate the organism with the microscope, from a cover-glass specimen, that night or the next morning, without cultures being made? Could a severe case of diphtheria be completely cured in two days so that swabbings sent to two different bacteriologists failed to isolate even one little germ? What do you think? Will thank you very much for information on this matter."

In answer to your first question, "Can a swabbing of the throat of a suspected diphtheria patient be isolated in any way except by nutrient agar-agar or Loeffler's blood serum," I would say that there would be some difficulty in isolating it on ordinary plain agar-agar, the diphtheria bacillus preferring a serum media, especially one containing glucose. On a good Loeffler's blood serum, the diphtheria bacillus will have multiplied to a considerable extent in ten or twelve hours—long before the other bacteria have increased appreciably. In all first-class laboratories the culture is examined after twelve hours' incubation and, if negative, again after twenty-four hours.

However, if the swabbing was obtained from the edge of the membrane and a smear was made upon a glass slide, properly stained, and examined by an expert, the diagnosis could be made immediately. Therefore, it is possible and probable that an expert could make the diagnosis from a swabbing taken at night and passed upon in the morning—in fact, he could pass upon it in fifteen minutes. The writer always makes a smear and very rarely errs in diagnosis. It is absolutely essential, however, that the smear be taken from the edge of the membrane, consisting as it does of fibrin, epithelial cells, and leucocytes, is dead tissue and is necessarily infected with such an enormous number of saprophytes, streptococci, staphylococci, and the like, that they completely overshadow the diphtheria bacilli.

A really severe case of diphtheria, so far as my experience has shown, could not be completely cured in two days so that swabbings would fail to show the bacilli, provided the swabbings were properly taken and properly cultured and examined.

For many years it has been the rule in all health-department laboratories, before releasing a person from quarantine, to require two negative cultures on two successive days,

the cultures to be taken from the throat and nose. Further, it is absolutely essential that no antiseptic be used for two to three hours prior to taking the culture.

From the general trend of your letter, I imagine that some one has made a diagnosis of diphtheria microscopically and that two days later the patient apparently recovered and that then swabbings were submitted to two other pathologists, who failed to find the bacillus. The possibilities in this case are as follows:

First, it may have been true diphtheria. The bacilli were found by the first examiner, but, owing to improper methods, were not found by the other pathologists two days later, either because the smears were not properly taken or an antiseptic had been used on the throat, or the examination failed to reveal them, notwithstanding they were there. Or, it is possible that it was not diphtheria, that the first pathologist found a pseudodiphtheria bacillus or a streptococcus mucosus, with a capsule in short chains, resembling the diphtheria bacillus and necessarily, as it was not diphtheria, the second examination by two other bacteriologists was negative.

Diphtheria antitoxin has little or no effect upon the diphtheria bacilli in the throat. After its administration it is true the membrane tends to retrogress but unless antiseptics be used the bacilli persist in the throat and especially the nose for many days thereafter, notwithstanding the patient has clinically recovered.

QUERY 6211.—"Scientific Determination of Paternity." F. A. R., Texas, requests us to explain the procedure whereby the father of an unborn child can be identified.

The test to which you refer has received comparatively little attention in this country, but we understand that in France, one or two legal decisions have been rendered on the strength of it. We are not sufficiently familiar with the technic to furnish you with a satisfactory outline: However, the principle is, that the woman is vaccinated with red cells from the blood of the suspected man. Should he be the father of the child, a reaction similar to that observed in the Von Pirquet test occurs in the pregnant woman. Sensitization of the woman (producing the reaction) is believed to occur as early as two weeks after impregnation.

If we are able to find literature upon this subject, we may give further details.

QUERY 6212.—“Undeveloped Mammary Glands.” T. H. S., Texas, is treating a girl, just sixteen years old, who for the last year and a half has been excessively intimate with two young men.

“The symptoms that first attracted her mother’s attention and for which I was consulted were, excessive menstruation—lasting about ten days of the twenty-eight—and neuralgia of the ovaries, the pain radiating all through the abdominal nervous system. After two weeks’ treatment, all the pain, menorrhagia, and the like, has subsided. The os uteri was dilated, to secure free drainage, and the womb was irrigated with a 5-percent silver-nitrate solution. Glycerin tampons were employed, to deplete the congested tissues. I also gave her this mixture: Specific pulsatilla, drs. 2; specific passiflora, drs. 4; specific gelseminum, dr. 1; water and whisky, equal parts, to make 4 ounces. Dose: One teaspoonful every four hours during the daytime; the last dose at bedtime.

“This girl is small and her mammary glands are very poorly developed. Her people are quite well off and the girl doesn’t mind spending some money if she can get what she wants; in this instance, a well-developed pair of mammary glands. Her flat breast gives her a stooped appearance. The question is, how can we make those breasts grow? Will corpus luteum do it? It seems to me that the drain upon her nervous system that has been going on for a year and a half is responsible for this condition.”

If you will study this matter with a little care, doctor, you will realize that, when an immature girl receives the constant attention of two men, it is not likely, especially under the circumstances described, that her mammae will develop properly. Had she become pregnant, the breasts then would have developed in the ordinary way; but, with the intense pelvic congestion and constant drain upon the nervous system occurring, it is not at all surprising that the breasts of a girl of sixteen who for eighteen months has been cohabiting with not one, but two men, have failed to develop normally—indeed, that the development was anything but a vicious congestion of the pelvic viscera, as is the case.

As to correction of the trouble, corpus luteum is hardly likely to prove beneficial. Were this girl our patient, we would look her squarely in the eye, and tell her that, if she wants to become a normal woman, she must act as a decent normal girl at her age should

act. Let her give those two young fellows their permanent *congé*, or at least get rid of one of them forever and tell the other that there may be some chance for him to marry her in two or three years, provided he will behave. When she has gotten rid of these lovers, she must absolutely refrain from resorting to substitute measures; that is to say, until she has acquired her full development she must let her sexual functions remain in absolute abeyance.

If your statements are correct, as we may assume they are, this girl commenced a strenuous sexual life at the early age of fourteen years and six months. The present writer, has, of course, known many cases in which the same thing has occurred even earlier, but it is rather unusual, unless the patient suffers from some uterine disorder or nymphomania, for a girl of that age to receive the constant attention of two men.

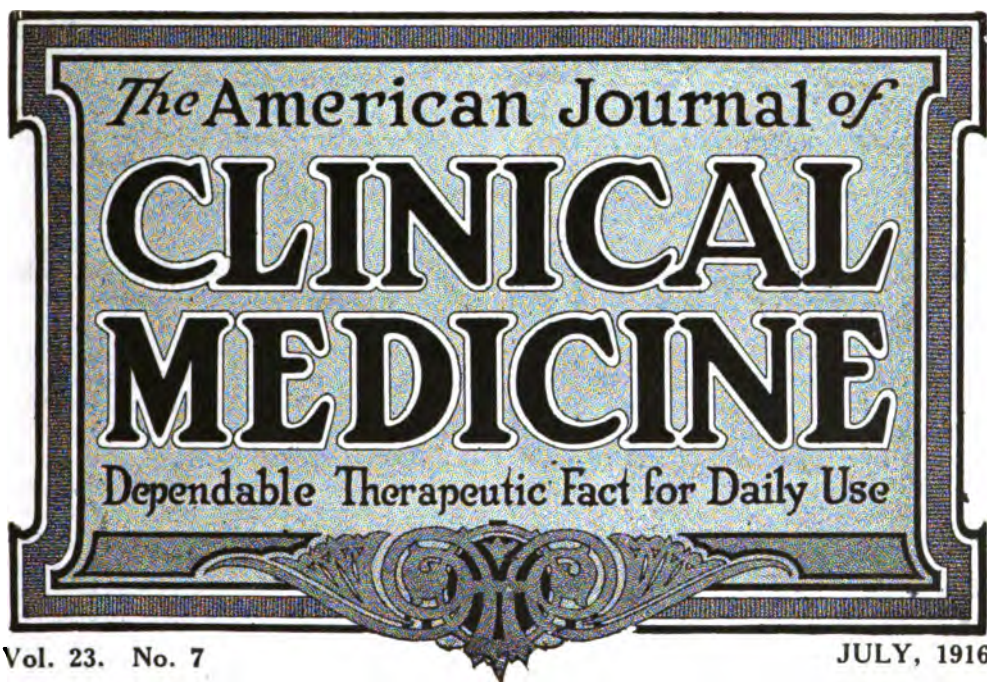
We strongly advise that you continue the depletive treatment. Then, in order to give the patient something to do, instruct her to massage the breasts with lanolin and coconut-oil (equal parts), but carefully *avoiding pressure about the nipple-area*. She may rub in half a dram of this night and morning. You should also impress upon her the fact that, no matter how much money she has, she can not buy a pair of mammary glands, except of the rubber variety. What this girl needs is good honest advice—and to learn that beauty and right living go hand in hand.

PICK-UPS FROM HERE AND THERE

Mure said: “It is my belief that the poisons of serpents, if sufficiently proven, would furnish the safest and most rapid means of combating all human infirmities.” Surely—if sufficiently proven! Wish he would begin with old age. Then take up darn-foolishness.

Subjective pain incident to childbirth serves no purpose in nature, but is an unnecessary result of an unchangeable natural law, that all severe muscular effort is accompanied by pain.—Rongy and Arluck, *Medical Standard*.

C. K. Humiston got data from 66 great surgeons on several points. Among them was, the use of anodynes after operations. The composite answer (*Ill. Med. Jour.*) was, to give them when they are needed. *Nota bene*: The country is safe!



The Value of A Code of Ethics

PERIODICALLY an eruption occurs in the medical societies, a tremendous fuss is kicked up, plenty of hard feeling engendered, and then the whitewashing committee gets in its work. Resolutions are passed that by their high-sounding phrasing and the unhumanly lofty principles enunciated, would have done credit to Thaddeus of Warsaw; and the accused member is acquitted, but with the admonition that he must not do it any more. The public-spirited or grouchy member who has formulated the charges gets himself universally disliked, and the reputation of being a "sorehead" clings to him for the rest of his days; he is a man who is best to be avoided.

Read over the venerable code of ethics, and one can not but say that there is not a thing in the rules to which any honest man can not subscribe; not a provision that any man ought not to follow uncompelled. But, here is just where the trouble arises—every human being resents instinctively the sense of obligation.

All good traits require cultivation—the weeds come naturally. The boy is primarily destructive and predatory—altruism is the ultimate degree of development, and not everybody reaches it. The primary instinct

of every normal human being is, to be free; and under the consciousness of freedom the moral instincts develop naturally. Tell a man that he *must* do a certain thing, and he resents the compulsion; let him alone, and his sense of right will lead him to do right.

A man need not be Christian, Jew or Buddhist in order to realize the intrinsic truth of the divine maxims, "Do unto others as you would they should do unto you," "Love thy neighbor as thyself," "Be kind to all that lives," for, the innate consciousness of every man accepts them as true. Let any body who has transgressed these simple rules face a gathering of his fellows—the medical society—and be called to explain why he has acted unjustly or treacherously toward his colleague, and he must either confess and promise amendment or else face the disapproval and ostracism of the rest.

But, let these rules be cast into a code of law or ethics and make their observance obligatory, and at once the spirit of rebellion is aroused. No orchard so tempts the boy as that one which is guarded by a savage dog, for, the fruit so protected surely "must" be sweeter. Whenever a new law is framed to restrain commercial activity within due limits,

the wits of the legal fraternity are set to work to devise means of evading it.

Similarly, promulgate a code of medical ethics, and at once men try how close they may shave its limits without actually transgressing—or being found out. If they slop over, their fellows joke with or commiserate them rather than condemn. The member who prosecutes is condemned as one who has seized the chance of making trouble, having caught his neighbor at a disadvantage; and it is the stickler for discipline who alone suffers from the affair.

The best rule of ethics is that of simple right and wrong—the Golden Rule. He who carries this in his heart and invariably acts upon it has little need of written codes. Such a one is not a wolf whose actions must be regulated by law, whose preying upon his fellows must be restrained within such limits as protect the pack in general, but he is a God-fearing, Christian gentleman, or its full equivalent, who does what he feels to be right, not for fear of punishment or of detection, but because he has trained himself to do so as a matter of course, to keep his self-respect. He desires to say truthfully, when he comes to face Eternity, that he has never knowingly wronged any human being or neglected an opportunity of benefiting others; and, if he can do this, whatever his creed, he may fearlessly step off into Infinity, to meet a just God.

There was an ape in the days that were earlier,
Centuries passed, and his hair became curlier;
Centuries more gave a thumb to his wrist,
Then, he was Man—and a Positivist.

PROFESSION—BUSINESS—OR BOTH

Doctor, have you ever been in this man's situation? Just listen:

"Dear Editor: A short time ago, I saw in *CLINICAL MEDICINE* the statement that a young doctor should call in the old practitioner for counsel and advice. It cannot be done in my own case. This has been on my mind for some time, but I just kept choking it down. When one doctor stoops to tell lies on the other, that man is not worthy the title of 'junk peddler.'

"I came to my present location over a year ago. After getting acquainted with the prices and the people, I settled down. Work came slow at first, but as soon as it did begin my competitor began to get busy also, and in order to discredit my work passed the word around that 'only the bums' came to me.

"I reduced fracture of two ribs and charged \$3.50 for this. Having occasion to be out of town when the patient desired the strips removed, he went to my competitor, who kindly told him I had charged too much and that he would have charged him only \$1.50. Not satisfied with that, he informed my patient that I had not done the work right. I lost this patient, of course. I engaged to care for an obstetrical case for \$10.00. Doctor spun another yarn and got the case at \$15.00."

[Here follow several of the cases with which we are all familiar, where the older man made mistakes but managed to wriggle out.—Ed.]

"This is the type of man whom I must meet and, yet, do business on a fair, honest basis. And then your editorial tells the young doctor that he should consult with the older one! I could never consider a man of the caliber of my senior for a good, honest opinion. If an honest opinion found entrance into his cranium, he would hardly know how to entertain such a stranger. You may think I am harsh, not so—I feel sorry for the man whose mind grovels so in the dust that he can see sheer nothing but the dollar. No man possessed of right ideals can stoop to such actions.

"I write these few lines because you are 'the man behind the gun' in an always most helpful magazine."

ANY YOUNG DOCTOR.

To this letter, one of the *CLINIC's* staff replied just as one who knows his big, kindly nature would expect he would. Nothing that I could say so well covers the situation, so, I shall repeat his words:

"Unfortunately, these cases are still to be found, and far too often, although I believe that physicians generally throughout the country are trying to be fair and considerate of one another. The situation you describe is certainly a very difficult one, and no one can blame you for feeling acutely concerning it. Nevertheless, the wisest course you can take undoubtedly is, to do your duty like a man, from day to day, keeping straight ahead and paying no attention to the criticisms and back-bitings of the other fellow. In the long run, chickens of that kind come home to roost, and it seems to me that they already are beginning to do so in your town. The fact that you have been upheld in your diagnoses by other physicians, and particularly by representatives of the state board of health, will get around to the people without your saying anything about it.

"Do not be tempted by anything the other fellow may do to follow the same tactics. Courtesy, honesty, fair dealing, integrity, and industry in the long run are bound to win out, and I am confident that you will make good and that your position will be firmly established in the community in which you live.

"Thank you, doctor, for writing us thus freely and frankly. We are glad to know the problems of the men in the field. Knowledge of this kind brings us closer to our readers, and I believe, helps us to help them."

Leave aside the personal element and take this case as a type. We have heard one side—we may easily supply the other; and, as we are not discussing this as a solitary case, can assume the judicial, impartial attitude.

We have an old established practitioner, into whose territory there comes a product of the modern school, versed in much with which the older man is unfamiliar. Each has certain advantages. The older man has no more income than he needs; he resents its cutting down, and feels sore that the people who have had his best service all the years desert him for this youngster. I do not excuse or justify his treatment of the young man; however, just put yourself in his place, and—honestly, would you do better?

There is the gist of the matter. Begin by thinking as kindly as you can of the older man; sedulously refrain from word or hint of detraction, ignore everything you hear of his saying about you—maybe he never said it, and most surely it has grown since it left his lips—and, whenever you can, put in a kindly word for him. He is not human if he can stand out against such treatment; and if he could, the townspeople would ride him out on a rail. Say no word in your own defense, but show a kindly spirit; the rest will do the talking for you.

Professionally, you are being tried out against him—and the best work can not long fail of recognition. But you are more than a professional man: you are a man, a citizen, and are being tried out as such in the great struggle for existence. This is what the young man never realizes until he no longer is young. The fittest who survives is not necessarily the best doctor, but the best financier.

If this older man has made egregious errors and, yet, come out ahead, he has beaten you badly; and it is up to you—just you, and nobody else—to learn how to compete with him commercially. Not by cheapening—if you have charged too much, come down; if

not, hold your prices and sturdily declare your services are worth what you ask; but don't add that his are probably worth what he asks. Leave that inference for the others to make. Do not lower your own standards because his are low. That acknowledges his superiority.

The thing is so simple and easy, if only you begin right, by thinking kindly of him. The rest comes as inevitably as age. But, you must realize that it is your own manhood, your fitness to wage the battle of life that is at stake, and not so much your ability as a doctor. You are a general who with superior forces and a better position have allowed the enemy to win his first battle against you. Never mind the old doctor—look to yourself; realize your failure in management and try to do better.

My brother, when he heard a man expressing his opinion of another in terms too vitriolic to pass the censor, was in the habit to remark quietly, "He speaks mighty well of you." Invariably the angry man drew in his horns and grumbled out something like "Oh, well, he isn't so bad, may be."

You would prefer to be just, doctor, and to give your whole thought to your duties as such—but you can not. You have to pay your way and be also business man and—chiropractor.

A hair on the head is worth two in the brush.

—Edwin F. Bowers.

PREPARING FOR TETANUS

We have long believed that the antitoxin for tetanus is a reliable prophylactic against tetanus. The fact has been further established, and now beyond a question, by the combined experience of all the enormous armies operating in Europe. In the terrain where the great battles are being fought in France and Belgium, the ground is heavily manured and infected with the germs of this disease to such a degree that a very large percentage of the wounded are likely to become infected. Early in the war, before it was possible to immunize any considerable number of the wounded, the number of persons who became affected and the percentage of those that died was extremely large. However, it has become the custom to administer tetanus-antitoxin to virtually every wounded soldier, at least whenever the preparation is available, and there is no question whatever that when given early it prevents the disease.

This experience should be brought home to every American physician, especially at this time of the year, inasmuch as the number of contaminated wounds is likely to be large. Fourth of July wounds have always been peculiarly deadly, primarily because they are liable to be infected with street dirt, which carries large quantities of the tetanus-bacillus, and, secondly, because there is a very considerable portion of contused and perforating wounds.

The tetanus-organism is anaerobic, that is, it thrives best in the absence of air. Any dirt- or dust-infected perforating wound, therefore, which shows a tendency to close over provides favorable conditions for the development of the disease. Every such wound should be laid wide open so as to permit free access of air to the most remote portions, and it should be kept open and allowed to heal from the bottom up. In addition, every patient who has received such a wound should be given a prophylactic dose of 1500 units of tetanus-antitoxin.

This should be considered an emergency-remedy, and, if it is not available at local sources of supply, the physician should carry a small stock for emergency use. While it may be true that 98 percent or more of persons who receive wounds of this character will escape tetanus, the fact that even one or two persons may contract the disease should be sufficient incentive for the physician to be prepared. We strongly urge the use of this antitoxin by everybody, in every part of the country, in every case of perforating wounds.

Life is short—only four letters in it. Three quarters of it is a "lie," and half of it is an "if."

A MESSAGE FROM IOWA

Last week we journeyed into Iowa with a number of pharmaceutical manufacturers who make preparations for sale to the medical profession, to attend the annual meeting of The American Association of Pharmaceutical Chemists, which was held in Cedar Rapids, May 29 to June 1. I shall not try to tell you about this meeting, for you are not primarily interested; but it was a good one. We got our feet under the table and swapped experiences with a lot of fine men, representatives of houses like the National Drug Company, The Standard Chemical Company, The Norwich Pharmacal Company, The Zemmer Company, The Maltbie Chemical Company, G. D. Searle & Company, and a big bunch of others, fifty or more all told and, therefore,

too numerous to catalog here. They were all earnest, hard-working fellows, none of whom are building up great fortunes, and all doing their level best to produce remedies of quality which shall merit the approval of the medical and allied professions. They deserve your confidence, and I am glad to tell you so.

We enjoyed this meeting and profited by it, but—Iowa itself was the big exhibit. From the time we entered the borders of the state, Iowa "boosters" were singing pæans of praise for the state which they call home. And I don't wonder. Iowa is a great, splendid, prosperous state, teeming with the unparalleled richness of her fat acres, bringing comfort and wealth to her children to a degree realized in no other part of the country—barring only the contiguous prairie states of the Mississippi Valley.

Our first stop in Iowa was in Des Moines, where we were entertained by Mr. G. D. Ellyson, president of The Standard Chemical Company, and his associates of that company, and by representatives of the Chamber of Commerce, the Manufacturers' Association and the Greater Des Moines Committee.

Mr. Ellyson and his friends, including particularly R. H. Faxon, V. C. Fitch, George E. Hamilton and Ralph Bolton, official representatives of the various boosting organizations of Des Moines, made our visit to that city one which none of us will ever forget.

After a breakfast at the Des Moines Club, where we were greeted by some of Des Moines' leading citizens, who took this meal with us at 7:45 a. m., when most prominent citizens are supposed (erroneously) to be still in bed, we visited the Capitol building, meeting the secretary of state, the adjutant general and other state officials. Next we went through the splendidly appointed new pharmaceutical plant of The Standard Chemical Company (where we found an "oasis"), and finally brought up at the lunch provided for us by the Chamber of Commerce, where short talks were given by Mr. Ellyson, Mr. Maltbie, Mr. Dunn, Doctor Abbott, and others.

In the afternoon we were shown Des Moines' hundreds of attractive homes in a long automobile ride, which finally landed us at Ellysonia, the beautiful bungalow of our host. Mr. Ellyson and his good wife took good care of us. We were given something to eat and something to drink, were regaled with music, cheered with good-fellowship, and throughout made to feel thoroughly at home. Everything possible which could contribute to our comfort and happiness

seemed to have been thought out in advance, and carried out with the simplicity, earnestness, and thoroughness that shows what a good business man and splendid fellow Ellyson is. There was a vote of thanks, and a few well-chosen remarks by Doctor Abbott, voicing the common sentiment of appreciation for Mr. and Mrs. Ellyson, to which Mrs. Ellyson responded in a few happily chosen words expressing the pleasure it always gave her to assist in entertaining Mr. Ellyson's business friends in their home. It was the joy of their life, she said, to be able now and then to contribute a few flowers along the pathway of life, and she was pleased and proud to have Mr. Ellyson's business competitors assure her that he was carrying these same principles into his business.

Miss Daisy Binkley then sang for us Carrie Jacob Bond's famous song, "A Perfect Day," and, "to give the finishing touch," Mr. Ellyson said he knew of no better way to express his feelings than by some old lyric Scottish lines:

Friendship makes us a' more happy
Friendship gee us a' delight
Friendship consecrates the drap-e,
Friendship brings us here tonight.

Happy we're bin a' together
Happy we're bin yin und a'
May time find us a' the blither
When we rise and gang awa.

Then we were loaded on the train for Cedar Rapids.

During our stay in Cedar Rapids, association business was the main consideration, and there was much of it, so there was less time for play. Manufacturing pharmacy has its problems, and in this day of drug shortage, heart-breaking prices and manufacturing difficulties, they are by no means small ones. But that prince of good fellows, Mr. E. S. Holt, of The Howard Holt Company, was our host in this city, and again we were entertained as they know how to do it in Iowa. Representatives of the local organizations, of the Commercial Club, the banks, and others—men like Wunderlich and Hamilton—were on hand at the banquet and elsewhere to tell us about their town and help us have a good time. We visited the plant of The Quaker Oats Company, the biggest concern of its kind in the world, and most of us got a glimpse of the wonderful resources of this section, which is probably the richest in the entire United States.

Iowa, we learned from Hamilton, the banker, has one automobile for every fifteen of its inhabitants; and if the time should ever come when it shall be necessary to follow Mr.

Bryan's military strategy, this state could load every one of its male inhabitants into their cars—and they are not all Fords—and proceed on short notice (over the finest highways in the Mississippi Valley) to meet the enemy and—tell them all about the glories of Iowa. Victory would inevitably cool her weary feet on the banners of the legions of this state—for there could be no escape.

Iowa raises more and better corn than any other state. Her barns and grain elevators are bursting with bumper crops of oats, hay, barley, rye and other grains. Her cattle exceed in value those of every other commonwealth—barring one only. Hamilton told us of the herd of a hyphenated farmer living near Cedar Rapids whose eighty animals sold at auction for more than \$50,000. Iowa likewise leads the world in hogs—but praises the Great Jehovah for the unrivaled generosity of her citizens. And her doctors, as every Iowa reader of these lines will admit, are all picked-to-win warriors in the ages-old struggle with Apollyon Disease—and we know that with only inconsiderable exceptions they pay their bills.

Iowa is rich, proud, prosperous, and happy. Best of all, she is productive, not parasitic—adding to the world's wealth instead of subtracting from it. Perhaps that explains why we saw smiles on so many faces. Their hearts are right!

Their hearts are right—that's it; and the thought brings me back to Doctor Abbott's brief message to Mr. and Mrs. Ellyson at their home in Des Moines. In business and professional life, as the doctor pointed out, the big thing isn't the money we make—it's the friends we make, the love we inspire, the confidence we win from those whose hands touch ours in the contact of daily life and over the bridge of commerce. Ellyson loves his wife and she loves him, and because of this love theirs is the perfect teamwork which makes the game of life worth playing for them.

The same feeling can be and should be transplanted into business. Ellyson is doing it—as everyone should. Better than money in the bank, more heart-satisfying than the ability to hold some small segment of the earth's surface and the people on it in the hollow of your hand, at your mercy, yours to be crushed or made at will, is the consciousness that love and mutual confidence rule your association with your coworkers—even with your competitors. The big success is won when cheerful faces greet you at every turn; when men stop you on the street with a "Hello

Gid—how are you, old man?" and slap you on the back in a way that makes your pulse beat quicker, and gives you courage to keep up the fight, stirring your heart to nobler, cleaner, bigger work.

Love that inspires confidence is the biggest thing in life, and it should be the greatest factor in business. I confidently believe that it is becoming so, and that the old days of cut-throat competition, harking back to the elemental man, whose fondest wish was to brain somebody with his stone-axe, are passing forever, to be replaced by a period of cooperative competition, in the professions as well as in business, during which success shall come to him who gives the best service and therefore inspires the greatest confidence. *And the inspiration will come from our friends—"God bless 'em one and all,"* to paraphrase the remarks of Little Tim.

And that's the biggest message we brought back from Iowa.

If one could choose one's parents, it would be perfectly proper to be proud of one's ancestry.

TOO MUCH ANATOMY AND SURGERY

The root of the prevalent pessimism in regard to the value of drugs is to be found in the overweening importance long given to the study of anatomy. Even as long as fifty years ago it was not uncommon to find students in the medical colleges who prided themselves upon devoting their whole attention to this one study—and upon their ignorance of all the rest of the curriculum. Is there in existence a man who can remember any student who thus prided himself upon his knowledge of physiology?

The anatomist developed into the surgeon—and the surgeon has always licked off the cream. Dealing only with the failures of the internists, the surgeon may be pardoned for failing to realize that these comprise but a small part of the internists' experiences.

Today there are none but surgeons and pathologists; and both concern themselves with the dead, with the end results of disease-processes, paying little attention to the morbid processes that lead to these endings. As we have often remarked, they deal with the ashes of burntout fires. Of functional affections, they never speak except with contempt, and interest themselves only in maladies affording material lesions—and in the presence of these they acknowledge their impotence. No man may claim to re-create a solitary living cell. The medical profession is today,

with scarcely an exception, engrossed in the study of the dead body and of destroyed tissues.

In the course of every disease, there must be a beginning, a period when the affected tissues are assailed but not yet irremediably impaired. We can not study this period in the laboratory, for the man is not yet dead, his affected organs still are functioning. The study must be made in the greatest and most neglected of laboratories—the sick-room. Lay aside your microscope and apparatus and study the man!

Every aberration from normal function has a meaning, a cause. Trivial these may seem—so is a drop of water trivial, but, put enough of these drops together, and the world may be drowned.

Sneer at these functional disorders and wait until material lesions have been perpetrated—and then acknowledge your inability to do anything? Oh, no, we are not helpless at all; we can step in and remove the useless apparatus, the pus collections, the end results that endanger the life of the patient. Yes, this comprises the sum total of the professional resources today. As for curing diseases before they have gone on to destruction, that is not considered at all.

This condition has never been acknowledged, and it may be vehemently denied now. It is true, nevertheless. There ever has been a tendency on the part of the medical profession toward abstract science—toward laying the foundations so deep and wide that by the time the surface has been reached there has been nothing left with which to erect the building.

Against this lofty professional ideal, there has always been a disposition to rebellion. Every man is more interested in himself than in his disease. To him, the cure ranks higher than the diagnosis. The history of medicine shows an uninterrupted sequence of uprisings of "outsiders" who professed to cure; and, although these have been men not versed in the lore of the schools, they invariably have met with a hearty welcome from the people. Not one of them has been noted for his discoveries in pathology, his skill in diagnosis, his knowledge of anatomy; but every last one of them has known men and has devoted his energies to the cure of their ailments. And every last one has had the support of the public.

These men have studied the symptoms of living men and have directed their efforts at curing them. Swiftly the public has rushed to them and deserted us. The reason

is, that the pretenders gave the people what they wanted, while we proffered them what we thought they ought to have. We have failed to realize that the study of sick men is a specialty, and that men of average learning and intelligence who devote themselves to this specialty are as likely to develop special skill in it as will the votaries of any other specialty.

Doctor, can you hold your own in the sick-room against the homeopathist, the eclectic, the physiomedic, the osteopathist, the Christian Science healer, the Chiropractor, and the rest of the innumerable rivals that throng about us?

True, we have gone into their methods in our ponderous way, and in due time announced that there is something of value in each, and then proceeded to appropriate and assimilate these with our other methods. We never succeeded as well as the originators. We fail, because we do not realize the one fundamental truth in all of these; which is, that they are based on a study of the patient. The book of nature is greater than all the printed books put together; and nature changes not, while few medical books are worth anything a few years after their appearance.

This morning comes the news that J. J. Hill is dead. The newspaper report speaks ambiguously of an "intestinal infection." Most probably constipation and autotoxemia robbed the world of this noble man. Neither the Mayos nor the New York surgeon summoned half across the continent, nor all the surgic skill in the world could save him. Yet, every one of us is aware that, had he been under the direction of a physician who comprehended the importance of the alimentary canal and could have applied the "clean-out, clean-up, and keep-clean" method, the great empire builder might have been spared for many years yet. But, the motto of the day is, "Wait until it is ready for operation. Meanwhile, do nothing."

The times are ripe for a great popular rebellion against this thing.

If God did not exist, it would be necessary to invent him.—Voltaire.

CLEAN THINKING AND CLEAN SPEAKING

Physicians as a class are frequently credited, or charged, with habits and peculiarities that are hardly in keeping with the seriousness of their profession and with the character of its

devotees. It is, for instance, a common idea that physicians are materialists, or atheists, because it is believed that they refuse to accept what they cannot demonstrate with the scalpel, under the microscope or in the test tube. Thinking people will readily see that the very study of anatomy, physiology, biology, and of all medical and allied disciplines makes it impossible for the student to acquire or to retain atheistic views.

It is also frequently assumed that physicians, at least in their leisure moments, are prone to be somewhat loose in their talk and that they are experts in telling stories that have been characterized vulgarly as "smutty." We venture to say that physicians, as a class, are more guarded in their language and more careful, not only in clean living, but in clean thought, than are many other men; although even for them the truth must be admitted of the saying of old, "*Homo sum, nil humani a me alienum puto.*" In an address recently delivered before the Christian County (Kentucky) Medical Society, Dr. J. W. Crenshaw insisted, with great justice, upon the necessity on the part of the physician to guard his thoughts and his speech. By pointed instances from his personal experience, he demonstrated the abhorrence that is liable to be inspired by vulgar, profane or obscene talk, and, conversely, the favorable impression that is made by straightforward and dignified language.

Undoubtedly most of us do express ourselves in a simple and dignified way and refrain from vulgar profanity, more particularly from using the name of the Lord in vain. We, as a whole, also have an inherent distaste for the obscene and suggestive, and, yet, most of us, it must be confessed, have slipped at one time or another and have indulged in "language" or have participated in or countenanced risky stories told in our presence. It is strange how our natures are often mixed, and we are reminded constantly of the double entity that is asserted to be living within us, and which Goethe has described so eloquently.

The writer is reminded of an old professor of anatomy in one of the Swiss universities, who was a regular terror for spicy stories, and who for that reason produced an ineradicable impression upon the minds of his students. One day, however, after telling one of his best (?) stories, he raised himself up to his full height and said, in all seriousness, sincerity, and good faith: "Gentlemen, never forget to take off your hat to, and to respect, every woman who gives a child to

the world." The anticlimax was marked, and that professor was forgiven for many stories that often had brought a blush to the faces of even his somewhat callous students.

It is important that physicians guard their speech and also their thoughts. It makes a bad impression to see them smile and sneer at things that are serious and sacred. It is also painful to hear them indulge in profanity and vulgar cursing. "Let your communications be, yea, yea; nay, nay: for, whatsoever is more than these cometh of evil."

Now, forget your haste, just for a second or two, let go pushing the train you are riding in, stop trying to do all your work at once; and perceive how deliberate, how regal, how indolent your soul is, how sure of itself, how indifferent to the petty chances of punctuality or accomplished toil.

Bliss Carmen

A DREAM? A FLORIDA COLONY FOR AGED DOCTORS

There is no living man but will acknowledge that eventually death will get him, while few, if any, there are who do not go on as if they expected to live forever. Express trains and taxes come at definite times, but death is so very remote that we really look upon it as upon the millennium—too far away to be practically considered. So, ever and anon someone of our fellows is stricken, and then we talk sagely of the inevitable end of his course of life; then go on living just that way ourselves.

Another matter that but few contemplate is, the supervening of age. Youth doesn't care. Manhood is too busy. Both are too well established in their forces to realize that time will surely sap them—that the days must arrive when "they have no pleasure in them," when the tides of vitality ebb, the zest of pursuit weakens, the blow lacks "steam," and the objects of endeavor appear to be little worth the effort. To me, the world offers no spectacle so pitiful as the doctor who has outlived his ambitions, his beliefs, his kindred and his friends, and who in his days of decay must still work to sustain life—having in his busy manhood days, been too much absorbed in the Present to take thought for his Future.

How easy it would have been to put aside a trifle regularly, that would not have been missed then, but for the fewer needs of age would have formed a sufficiency.

You know all this. That's just the trouble—you know it but too well. You read it, yawn, and straightway forget it—you con-

sarned old dubs! Now I want you to do something—to act upon it.

Doctor Cuzner is one of those men who, even in his well-earned retirement, can not keep quiet—he must be doing something useful to his race. So, he wants to donate four acres on the St. John's River, in Florida, as the nucleus of a home for elderly retiring physicians.

I know the place. Location, climate, salubrity—the combination is as near an earthly paradise as any of us is entitled to. The region has the warmth that we desire and need, the exuberance of vegetation, the fertility of soil, the invigorating salty sea-breezes, the bathing, boating, fishing; the only drawback is its close proximity to Jacksonville. Still, some of the possible future denizens of this retreat may be infected with the movie-craze or other form of city-madness, and, so, not feel this feature as a serious objection.

This arrangement may do for a starter—but only that. Some of you may want a five-acre tract and a hut on it with plenty of well-screened, open porch-room; also, pure water and good bathing; the tract planted with whatever is best suited for it—a good kitchen-garden, fruit, and nuts; pasture for a pair of milch-goats; chickens and other domestic fowls; a kennel for a couple of Airedale's. Moreover—all that for a cost inside of five hundred dollars!

Suppose 100 join in this, each putting up that sum, payable in monthly installments of, say, ten dollars, and form an association; providing such regulations as shall forever shut out the greedy monopolist. No salaries, no forfeitures, no expenses, except what may be provided for by a small quarterly fee—say, \$2.50 each—or \$5.00 a year from the 100 members. Buy a suitable tract and divide it into the 5-acre lots, letting these be drawn by lot, and each to be free to develop what he wishes on his own. We may raise oranges, lemons, grape fruit, bananas, sapotes, tamarinds, plantains, celery, peanuts, pecans, garden-truck, berries, peaches, grapes, bulbs, flowers, drug-plants, palms, ferns, mushrooms, pineapples, camphor, tea, silkworms, frogs, terrapin, trout, any bird or animal that is worth cultivating—the number of things one might make a hobby and (perhaps) a good living from is beyond computation. These call for thought, reading, time, and as much actual outlay of money and muscularity as one may have to spare.

Meanwhile, one may well expect that such a settlement would attract a goodly number

of our old friends and patients who might be in need of just such conditions as ourselves and desire to be within reach of their trusted adviser of years. My specialty is, the Prolongation of Life, and I should expect to form on my acres a colony of those who care more to live long, happily, and healthily on this planet, rather than to pile up scads for the ruin of their children. Incidentally I should try out the suspicion that from the alligator a serum might be developed that would cure tuberculosis!

Now, if any of the many thousands of readers of this journal feel that this plan offers allurements, let us try it out. First must come the cash. I won't have it; the safest man to handle it is yourself. Each month put in the savings bank what you can spare. When you have \$500 ready, let us know; and as soon as enough are ready, we shall meet at Cuzner's and select a location.

Personally, I like the idea of an undeveloped tract that can be bought for little—preferably far distant from the towns, accessible only by boat so as to keep away undesirables and tramps. With such a tract, we need not wait for the 100 to put up the sum named, but could begin sooner.

That is one plan. If anybody has a better one, let him write at once to this journal. The more the better. But—just think of the roaring old Christmas celebrations we should have in Florida, with the children flocking in from all parts of the North !!!

It is easier to miss a piece of great fortune, than to bear a great misfortune.—Heinrich Heine.

REMOVE THE CAUSE

That the cause must be removed is an axiom in therapeutics, to which deservedly great importance has been attached; but the universal tendency to make a fetish of any good thing as soon as its value has been once admitted is shown here. One would imagine that the sum total of our possible beneficial intervention was comprised in this one thing.

In his day, Brown-Séquard acquired great kudos by adverting to the influence of reflex irritation from local causes in the induction of epileptic seizures. His world-famous case was that of a boy who had a convulsion whenever his foot pressed against the floor. Examination detected a something like a grain of sand on the sole of the great toe, pressure upon which occasioned the spasm; and removal of this granule cured the malady.

Years before this time, Esquirol had ob-

served similar phenomena, but also that the removal of the excitant did not always cure the malady. This is in closer accord with this writer's personal experience, that such striking grand-stand plays as that of the illustrious Creole are not always successful.

Removal of the bullet does not cure the wound. In the presence of such maladies as the vomiting of pregnancy, the law-abiding or conscientious practitioner will stop to ask himself, "which cause?" before proceeding to its abatement. Aside from all such conditions, we have also to consider that many maladies may be set in motion by special irritations, but continue after the original cause has ceased to act. This may be from habit or because the affection once set in operation has no intrinsic tendency toward cure.

Let us not go to the other extreme of neglecting or undervaluing the etiologic indication. There may be an anomaly that is the origin of a whole vicious brood of reflexes that can not be controlled as long as the cause remains in operation. We have, then, a leakage of the nerve-force, that keeps the patient always drained, never allowing an accumulation of energy-surplus to be made for special demands. Every such special demand finds the patient unprepared, and nervous and psychic phenomena appear.

Case: A lady has constant headache and pains and tendernesses along the cecum and colon and in the region of the right kidney; digestion is imperfect, bowels are sluggish, sleep is disturbed and unrefreshing, health impaired, metabolism sluggish. As a matter of course, she had been to Rochester, and the very thorough examinations made there had not detected any disease. Sixteen years previously she had had the right kidney anchored, to remedy nephroptosis. An abscess followed, this discharging into the urinary ways. She has never been well since.

A finger being inserted into the rectum, an exceedingly sensitive and spasmodic sphincter was encountered and the whole train of nervous phenomena was aggravated thereby. The sphincter was dilated thoroughly. The nervosa were but slightly modified. To make this an ideal report she should have been immediately relieved, and we should have had a fine opportunity to crow over our great northern colleagues—but we hadn't. However, the way was cleared for really curative treatment, for we learned that we had to deal with a chronic catarrhal condition of the large bowel, with muscular paresis, fecal absorption, and its consequences.

Treatment commenced with a decided, positive promise of a cure, which would take time, "since chronic maladies require chronic treatment." Rhubarb was given with hydrastis, and sanguinaria. Of this combination a dose was ordered each morning; if the bowels did not move by noon, a second dose was to be taken; if not by evening, then a third one. If this did not suffice, she took a warm enema, with 30 grains of zinc sulphocarbonate added; this followed by a half pint of quite cold water as a bracer for the sluggish tissues. Six Bulgarian-bacillus tablets administered daily, to supply the intestinal tract's defenders an adequate reinforcement. Diet was carefully arranged, so that she ate some of every food placed on the table at *table d'hôte* meals. But she ate properly, masticating and insalivating her food thoroughly, took no cold fluids while eating or anywhere near meals, and avoided excess of total quantity as well as of each of the divisions of foods. Between meals, she did no nibbling, but if hungry took a cup of clam-broth or of hot salted milk. All the elements of personal sanitation were arranged with scrupulous care.

One more item—we have a group of remedies whose value is rarely appreciated even by well-informed and experienced therapists—the sedatives. Gelseminine, cicutine hydrobromide, and solanine, sedate the nerve-centers, without the debilitating action exerted by the bromides, in effective doses, over the digestion and the vitality. They lessen the irritability of the long-overexcited nerves, and our curative treatment will be accelerated. So, she received gelseminine, a full dose of 1-50 grain two to three times a day. No such perils are encountered as with opium derivatives; no habit possibility or nerve degeneration looms in the background. Instead of having the hemic toxins thrown back into the cells, as with morphine, they are thrown out of the body by the eliminants.

The result?

We said she would get well; and when one deals with therapeutic certainties, such positive prognoses are permissible.

Open the door of truth and falsehood, and it will certainly be a lie that will enter first.—Napoleon III.

AS TO SOME OF OUR INSECT ENEMIES

The Chamber of Commerce of the United States has just issued a bulletin calling attention to the menace of the boll-weevil to the cotton crop of the South, and to its vast economic importance. Twenty-three years

ago, this exceedingly undesirable immigrant eluded the officers on guard along our Mexican border and slipped into Texas. Since that time, the weevil has steadily extended its habitat, until now its ravages cover the greater part of the western cotton-belt, while extending over the rest at the rate of from forty to seventy miles a year.

The economic loss from this pest has been immense; yet, the cotton crops of the country have increased and also certain compensations have followed. The planters have been driven to study methods of seed selection, cultivation and management in order to meet the evil, and, better yet, to that diversification and rotation of crops that goes so far to establish an insurance of agricultural returns. With them it has been "cotton, cotton, and nothing but cotton" for many a year, until the laboring class of that region has become incapable of doing any work but raising cotton. This developed slavery, since cotton demanded a certain quantity of labor virtually all the year, while the cereals called for help only during the planting- and reaping-seasons. A good crop of cotton paid such rich returns that the planter could not be persuaded to raise anything else; and the huge profits of the fiber-plant went to pay for food and other needs of man and animal.

A crop that returns annually the full value of the land, anywhere from fifty dollars to one hundred dollars per acre, surely seems preferable to one the net value of which does not exceed much more than half as much. Part of the apparent profit is lost in poor crops, part in the low prices ruling some years; but possibly the peculiar habits of finance fostered by this one-crop system have more to do with the matter. The cotton-raiser has no income during eleven months, while for one he is affluent. Borrowing seems a necessity, even at very high interest, for such crops warrant this; and then comes such a wealth of funds that lavish expenditure is the inevitable sequence of months of penury. Indebtedness and free spending are habits easily acquired, and not readily broken. Nine percent usury seems little as compared with 100 percent profit; but the one is sure, and it surely eats up the debtor in time. The openhanded hospitality and the charm of manners that render the South so delightful to visitors are so inseparably connected with this one-crop system that one may well ask whether a change is likely to alter the ways of the citizens. If so—let us have less cash in bank and keep things and people as they are.

Many efforts have been made to stay the

ruin induced by this pest of the cotton-boll-weevil. Sprays and poisons fail, because they act on the surface, while the insect burrows into the downy bolls. "Burning or plowing under the infested cotton-plants in the fall, burning all brush heaps, picking and destroying weevils that appear upon the young cotton, picking and destroying the infested squares during the growing season, rotating crops so that the weevils find no cotton to feed upon when they emerge from their hibernating quarters are some of the remedies that experience has shown to be the most effective." Sunshine, hot dry weather, many birds, and about 45 species of predaceous insects that prey on the weevil are among our effective allies in this war.

Only about three percent of the weevils survive the winters; and it is said that the districts that suffer from overflows of the great river are comparatively free the following season. The report states that the weevil has no other food but the cotton; but this is a mistake, for it has been shown that the insect lives on the okra, milkweed, and a number of other plants, although it prefers cotton. Were it not for this, the spread of the pest might be stopped by establishing a 100-mile neutral zone about it, in which no cotton should be grown for a year, so that, by repeating this each year, the invasion might be beaten back to the original source. As it is, the insect has become domesticated in the United States and seems to have come to stay.

In the Mississippi delta an effort is being made to get rid of the weevil by rotation of crops and by planting the cotton very early, so that it attains an advanced stage before the weevil makes its attack. Altogether, this forms one of the most interesting phases of the war waged by man to wrest nature from its savageness and bend its forces to our will.

The report concludes: "It is a curious and significant fact that the life-history of the South—social and economic—is bound up in the story and the conquest of three insignificant and malignant insects—the Texas fever, or cattle-tick, the cotton-boll-weevil, and the malaria-bearing mosquito."

The study of the tick and the mosquito has progressed so far that we now know how to put an end to their ravages. The tick is exclusively carnivorous. Hence, when the cattle on a ranch have passed through the disinfecting-tank, they should be confined to a corral for a certain period, during which the ticks in the rest of the ranch starve. Then the cattle are again dipped and ex-

cluded from the corral. Such a ranch will be free from ticks.

The efforts to exterminate the mosquito are useful, but not always completely successful, since the insect may breed even in the drop of water at the axils of leaves. But the great discovery is, that man is the source of malaria-infection for the mosquito. He is the carrier who retains the plasmodia from one season to the next and reinfects the lady mosquito at her first visit. It is not enough (although it helps) to prevent access of mosquitos to the man who is actually down with malarial fever, but the carriers should be detected and cured. Bass and his associates are endeavoring to persuade the people of the malarial districts to undergo expert examination for the parasites, during the winter when they are dormant, and then, effective quinine dosage may put an end to the malady in that district.

It is a very easy and simple matter thus to ascertain the source of the evil, and devise the means of ending it; but the labors of Hercules were the merest child's play beside that of inducing the people—all the people—to adopt these measures. Those who are younger and more optimistic may tell us why typhoid fever exists, when it could be so easily ended, were every doctor to see to it that the excreta of his typhoid-patients were put to soak for some hours in freshly prepared whitewash.

But, if the most intelligent, most progressive, and most erudite class of the community—the doctors—fail to adopt universally this easy measure, how expect the entire population of a malarial belt to accept the costly and, to the less-learned laity, rather appalling procedures of blood examinations and quinine dosage in effective quantities? There would surely arise enough antiquinine individuals to render the procedure nugatory.

Memory is a good thing, if properly regulated. One should forget to remember some things, and remember to forget a great many more.—"Modern Society."

PRACTICAL POINTERS FOR JULY

One of the best remedies for diarrhea in children or adults is a good culture of the Bulgarian bacillus; and it is harmless.

One of the best remedies for postoperative shock is a camphor in oil solution, administered hypodermatically. Give 1 1-2 to 3 grains at a dose.

Giddings' "high shock enema" consists of black coffee, brandy, salt solution, each 2 ounces, together with 1 dram of adrenaline

chloride solution. It should be administered at a temperature of 110° F.

Our southern brethren should tell us more about pellagra. Is it caused by diet? Is it cured by diet? How many of you accept the Goldberger hypothesis? How do you treat it?

The Bulgarian lactic-acid bacillus has been tried, and (it is said) found effective, in the treatment of pellagra. We should have more reports regarding this use of this remedy.

Are you looking for a real sedative—one that will take the place of the bromides and is free from the manifest disadvantages of these powerful drugs? Try solanine. Use it in epilepsy or in any other condition where sedation is required.

Theories may come and hypotheses may go, but our faith in intestinal antiseptics increases in spite of them all; and the authorities are beginning to take them up! After all, there is no better remedy than the sulphocarbolates for the treatment of the infected alimentary canal. "Dose enough."

For seasickness and carsickness there is nothing that acts with such certainty as a combination of strychnine sulphate, hyoscyamine and caffeine. Substitute atropine for the hyoscyamine if you wish.

Sunstroke? If there is high temperature, put the patient in a cold bath, and rub. If there is heat exhaustion, with pallor, stimulate. Try lobeline hypodermatically to relax if there is any tendency to spasmodic states.

We have never lost our faith in the intestinal origin of pellagra, and now new evidence seems to be accumulating that, after all, it is an infectious disease. Read the report of the investigations made by the Postgraduate Medical School and Hospital, of New York, as given in "What Others Are Doing," this issue.

To control post-anesthetic thirst, give a high rectal enema of warm salt solution as soon as the patient leaves the table. The average rectum tolerates and retains from four to six ounces every four hours; therefore, repeat the dose p. r. n. An occasional sip of hot water controls thirst better than the most generous draught of cold water.

The latest cure for pernicious anemia is splenectomy. This procedure was first undertaken by Eppinger and De Castellani and has recently become very popular in this country. It was the subject of a symposium at the meeting of the American Medical Association in Detroit. Remarkable results were obtained in some cases, in fact, in a collated series of cases improvement was shown in 63 percent.

The Fowler, or semi-erect position, says Giddings in *The Boston Medical and Surgical Journal*, is one of our greatest assets in treating cases of appendicular abscess, septic peritonitis, or any condition in which the patient has been exposed to abdominal infection. In this position all the fluids gravitate to the pelvis, the lymphatic supply of which is relatively poor. This, of course, means less absorption. The fluids in the pelvis are readily carried off by the use of the Murphy rectal "drip."

In treating intestinal stasis, Eggleston (see *Medical Record* of March 4, 1916) advises a bulky diet to stimulate peristalsis; reduction of proteins, to lessen putrefaction; lactic-acid forming bacteria, to check the growth of putrefactive organisms; with agar-agar, bran and a mineral oil for their laxative action. Speaking of mineral oil, use one of the delightful emulsions now on the market, especially if your patient is a woman with a highly sensitive sense of taste.

Doctor Waugh says there are two forms of bronchial asthma. One is relieved by a good-sized hypodermic dose of atropine, the other by a relaxant hypodermic dose of lobeline. Free the bowels completely, since many cases are autotoxemic; allay nervous irritability with the milder antispasmodics, such as passiflora, cypripedium or scutellaroid; carefully regulate nutrition and personal sanitation in all its branches; and cure any local affection, however slight and apparently inconsequential. Provide a vital interest and prevent introspection, and your patients will do better.

The veterinarians are using a great deal of lobeline sulphate and they recommend it in the highest terms as a virtually nontoxic antispasmodic, acting quickly and allaying excitement due to various causes as few other remedies can do. They are using it in the treatment of tetanus, in flatulent colic in horses, in heat prostration, and in various other conditions accompanied by spasmodic and excitable states. Here is a hint for the human doctor. We know that lobelia is a favorite antispasmodic remedy with the eclectics. Lobeline is more exact, and we believe it will give results obtainable from no other preparation. It can be given either by mouth or hypodermatically. It should be tried in sunstroke, eclampsia, and other convulsive conditions, pushing to thorough relaxation. Doctor Ellingwood declares it is the best remedy in pneumonia, and praises its action in sciatica and lumbago.

Leading Articles

Chronic Prostatitis, and the Technic of Prostatic Massage

By WILLIAM J. ROBINSON, M. D., New York City

Editor of "The Critic and Guide" and of "The American Journal of Urology and Sexology"; author of "The Treatment of Sexual Impotence and Other Sexual Disorders"; "The Treatment of Gonorrhea and Its Complications"; "Never-Told Tales," etc.

I OWE a humble apology to the readers of CLINICAL MEDICINE. I promised a series of articles on the prostate gland for the pages of this journal. I expected to be able to furnish one article every month or at least every other month. Unfortunately, the demands of a constantly growing practice (a practice which is of so personal a nature that it cannot well be handed over to assistants), and the increasing demands of journalistic and literary work have made it practically impossible for me to do any outside writing. For some time to come, it will, therefore, be impossible for me to contribute regularly to the pages of this excellent journal; however, on an occasional contribution now and then the readers of CLINICAL MEDICINE may safely count. I know what an appreciative audience the readers of CLINICAL MEDICINE constitute, and I should not like to part company with them altogether.

In my previous articles, I several times mentioned the subject of prostatic massage. I was under the impression that every physician was familiar with the technic of this procedure, but this does not seem to be so, and a great number of physicians have written me, asking that I give them a brief description of the technic of massage of the prostate gland; others requested me to furnish an article on chronic prostatitis.

Many physicians seem to have a personal interest in the subject, for the number of physicians over 40 years of age who suffer from this affliction seems to be enormous. It appears that at least 7 out of every 10 physicians have some form or other of prostatitis or hypertrophied prostate gland.

As I have treated the subjects of prostatitis and of prostatic massage elsewhere, I can do no better than to quote from my "Treatise

on Gonorrhea" and my other writings on the subject.

The Causes of Prostatitis

One of the most important factors in the etiology of chronic prostatitis is gonorrhea; still, gonorrhea does not play the same relative role in the causation of chronic prostatitis that it does in the causation of acute prostatitis. In the latter form, gonorrhea is preeminently the principal factor; other causes play but a subordinate role. This is not so in chronic prostatitis; while, as I have said, gonorrhea does play a very important role, other factors are also of great importance.

Among those factors of chronic prostatitis, we may enumerate chronic urethritis of whatever origin; masturbation; sexual excesses (that is, too frequently repeated natural sexual intercourse); coitus interruptus; complete abstinence, particularly if accompanied by excitation, mental or physical, without gratification (it is remarkable how the overuse, abuse or the nonuse of a function frequently leads to the same result); a steady, long-continued sedentary life, chilliness or colds from sitting on a cold stoop, and so on; catheterization; stricture; and long-continued cystitis.

Symptoms of Chronic Prostatitis

The symptoms of chronic prostatitis may vary from the mildest to the extremely severe. There are cases of prostatitis which are symptomless or practically symptomless, and there are those that assume the character of a very serious malady.

The symptoms of prostatitis may be classified as local, sensory, urinary, sexual, and general nervous.

The *local* symptoms are those that we discover by an objective examination. The prostate gland is usually enlarged, soft, boggy; either soft throughout or soft in some spots and hard and nodular in others; more than normally sensitive on pressure; and it exudes a turbid lumpy secretion when expressed.

The *sensory* symptoms are: heaviness and a dragging sensation in the perineum, pain in the prostate gland and the perineum, and pruritus ani or itching around and within the anus. The patient cannot sit comfortably for any length of time in one place and likes to shift his position. A symptom that can be frequently observed by the careful observer is, that the patient, when sitting down, will sit on the edge of the chair and, if the chair permits it, on one buttock only. Walking is less annoying to him than sitting or standing. He feels most comfortable lying down. While the pain may be limited to the prostatic region, it may—as is easy to understand in the case of an organ so rich in nerves as the prostate gland—radiate to various parts of the body, to the testicles, urethra, penis, thighs, and small of the back. The pain may also radiate to the kidneys and simulate the pain of renal colic. Personally, however, I have not seen such cases. In renal colic, the pain is too acute, too sharp to be mistaken for the dull, gnawing pain of prostatitis. Nevertheless, some authorities claim to have seen such cases.

A very frequent and most annoying symptom is, a leaden heaviness in the calves of the legs and also a burning in the soles of the feet. These symptoms make themselves particularly noticeable in the afternoon, around about 4 o'clock. I have been able to diagnose prostatitis in a great number of instances from these two symptoms alone. With the cure of the prostatitis, these symptoms disappear.

The Urinary Symptoms

One of the most common symptoms is the *frequency* of urination. The patients may have to urinate every two hours or even every hour, and, if they happen to drink some irritating liquid, such as beer, may have to urinate as often as every fifteen or twenty minutes. They also have to get up in the night from one to four times. Another symptom is the *urgency* of urination. There is a difference between frequency and urgency. A person may feel like urinating frequently, but, if he is unable to urinate at a certain time, it may cause him no effort to retain his urine. In the case of urgency, however,

when the desire to urinate comes on, it must be complied with instantly, or the patient is liable to wet his underwear. There is a disagreeable, perhaps scalding, sensation on urinating, and there is dribbling of urine after the act. The size and character of the stream is often unaffected, although, as a rule, it is smaller than usual. The urine itself frequently is turbid and contains many bacteria and a large amount of phosphates; in fact, *phosphaturia is one of the most common symptoms in prostatitis*. Whether it is a direct result of the prostatitis or whether it is caused by the nervous condition induced by the prostatitis is an open question.

The *sexual* symptoms are briefly summarized in imperfect erections and premature ejaculations. The libido may be diminished, but, as is so often the case whenever any irritative condition exists in the prostate gland, it may be greatly increased, causing the patient to indulge to excess and thus still further to aggravate his condition.

The *general* and the *nervous* symptoms produced by an irritated or inflamed prostate gland are literally legion. At first there is a general irritability, a physical and psychic irritability. The patient responds much more quickly to external stimuli, such as changes in temperature, and he gets very easily upset over little things. Then there occurs a general depression. This depression expresses itself, not merely in a lack of desire for work and a lack of interest for things, but in a general despondency. The patient may occasionally become deeply melancholic, and this to such an extent that he may harbor suicidal ideas. If the condition lasts long, he may become a victim of sexual neurasthenia, with its legion of symptoms.

Other symptoms will be found described in my articles that appeared in the January and February issues of CLINICAL MEDICINE.

As to the Treatment

While prostatitis, as we have seen, may be a serious complication, giving rise to numerous annoying symptoms that make the patient wretched, diminish or destroy his usefulness, and may even lead him to suicide, there is one bright feature about it, and that is, that it is very amenable to treatment.

While we may not change the secretion in a suppurating prostatitis to such a degree that it does not contain a single pus-cell, still, practically all cases of prostatitis may be improved to such an extent that they will produce no symptoms, so that the patient will not be aware of its existence.

The treatment of prostatitis, as of all diseases of the genitourinary organs, is both general and local. The patient must guard against constipation. The diet must be bland, strong spices and condiments being eschewed; alcoholics must be reduced to a minimum; and everything possible must be done to raise the general condition of the patient from below par to par or above par. Cool baths and douches are useful for the general system, but hot sitz-baths are necessary for the prostatic condition. It goes without saying that any pathological condition in the urethra, such as a posterior urethritis, or a stricture, or colliculitis, or seminal vesiculitis, must be treated concomitantly.

Prostatic Massage

There is one measure, however, which is more important in the treatment of chronic prostatitis than all other measures combined, and that is massage of the prostate gland. It is quite remarkable what rapidly beneficial effect a massage of the prostate gland will produce on the patient's condition, both local and general. It constitutes one of the most gratifying methods of treatment in the venereal specialist's work.

Without the patient being told what the massage was for, what it was expected to accomplish, he will either at once or at the next visit volunteer the statement that he felt better immediately, that not only did he feel an improvement within the rectum and perineum, but he felt generally better. In fact, even a mere examination of the prostate gland, in which you sweep the finger around the gland to determine its contour, size, and consistency, and in which you do hardly any expression, produces a beneficial effect. There is no exaggeration in saying that the effect of prostatic massage is often simply marvelous.

The Technic of Massage.—The way to perform massage properly and effectively is, to have the patient, standing with his legs well apart, bend over a chair or the examining table, firmly supporting himself with both hands. The index-finger of the gloved hand, over which an extra finger-cot may be put on, well anointed with petrolatum (for rectal examinations I prefer petrolatum to the water-soluble lubricants), is introduced gently into the rectum, and the prostate gland is gently but firmly massaged, first from the right side toward the median line, then from the left side toward the median line, then a few firm pressing strokes are made from

above downward. Special pressure is applied to any indurations that may be encountered or to any specially soft spots.

When the massage is completed, the patient is told to get up gradually and slowly from his stooping position, and then is given a glass to urinate in. The urine washes away the prostatic secretion.

This is for ordinary cases, in which there is little discharge, and that chiefly catarrhal. But, where there is much discharge and of a purulent character, it is best to have the patient urinate first, then to fill his bladder with a 2-percent boric-acid solution, then massage him, then tell him to urinate, and after he has urinated it is well to instill into the bladder a dram or two of a 1 : 1000 solution of silver nitrate, depositing a few drops of the same solution throughout the course of the urethra. This is, to prevent any infection from the prostatic secretion.

Massage in the Horizontal Position.—Some physicians perform prostatic massage with the patient lying on his back or even on his side. I am opposed to this position, because it is much more unsatisfactory than the standing-stooping position. The finger can never reach quite as far with the patient lying down as with the patient standing up and pushing his prostate gland against the finger. Nor can the physician's finger ever get such a leverage with the patient in the horizontal position as when the patient is standing.

For the mere purpose of examination, the recumbent position may be sufficient, and when the patient is of an extremely nervous temperament and subject to fainting spells, that position must sometimes be chosen; but it is never the position of choice, and we can never be sure of giving the patient a thoroughly satisfactory massage in that position. Another point, perhaps not of so much importance, but still of some importance, is, that when the patient is stooping down the secretion, through gravity, has a tendency to run out of the urethra; in the recumbent position, it is sure to flow back into the bladder.

Abuse of Prostatic Massage

There is no therapeutic procedure, beneficial as it may be, that cannot be abused or overdone. This is true of massage. Useful as it is, much damage may be done by it if it is performed too brutally or too frequently.

There must never be a digging of the fingertips into the prostate gland; there must be only a pressure with the entire palmar surface

f the finger. Too much force must not be used, or the inflammation instead of being allayed may be increased in severity or even necrosis may be caused. Nor must the massage be performed too frequently. But here no dogmatic statement can be made as to what constitutes frequency: some patients can stand massage every other day, some only once a week or once in ten days.

Massage must not be performed when there is acute inflammation in the prostate gland or an acute exacerbation of a chronic inflammation.

Besides the aggravation in the condition of the prostate gland itself that the too frequently or too brutally performed massage may cause, it may also cause an epididymitis, a seminal vesiculitis, and even sciatica. Not too much zeal in the best of causes!

A Few Minor Points

1. Some patients come to the office with full recta, the feces pressing on the prostate gland. This makes it unpleasant for the physician, for it not only occasionally interferes with the proper performance of the massage, but it induces in the patient a desire to defecate. Such patients should be told

always to empty their bowels before coming to the physician's office. If they cannot do it spontaneously, they should take an enema.

2. Where the secretion from the prostate gland is so profuse as to run from the urethra, the patient is instructed to support himself with one hand only, holding in the other hand a small glass under the penis to catch the secretion.

3. Be on your guard and watch your patient very carefully when giving him the first massage, for some patients faint after the first massage. Let the patient get up from his stooping position very slowly, make sure that he is not pale, and that he has no sensation of fainting. If he complains of a sense of weakness, the best thing is, to lay him down on the examining-table or couch for a few minutes. Some sensitive patients are apt to vomit profusely.

4. In some obstinate cases of prostatitis, I have found the introduction of a potassium-iodide and iodine suppository, followed by a gentle massage for five to seven minutes, very beneficial. The massaging apparently causes a much greater absorption of the potassium iodide and iodine than will the mere introduction of the suppository.

Intravenous Medication

When and How Employed

By W. N. FOWLER, M. D., Kalamazoo, Michigan

WHETHER medical nihilism or the present craze for surgical procedures has been the incentive to increased interest in intravenous medication does not particularly matter, for, certain it is that the growing interest in this method of administering drugs will be able to hold its own, because of the prompt results and many other advantages accruing, not only to the patient, but to the physician as well. The danger associated with this procedure has been largely overestimated, and the older teachings about "air in the vein" and its untoward effects can be disproved without effort.

It is not my intention to discuss the chemistry of the body or the solutions that have been administered through the blood stream. The number of drugs that are being administered in this way is comparatively large and is steadily growing. Almost the first one so to be used was sodium salicylate with its combinations, for rheumatism in its various

forms. This remedy, combined with caffeine, is being used very successfully in acute and subacute conditions. It has been combined with colchicine with remarkable success; still, care must be exercised in the administration of this combination, although the results warrant its use in many cases.

Sodium Salicylate in Tuberculosis and Rheumatism

Sodium salicylate combined with guaiacol has been used in rather large doses in quite a variety of chronic ailments and at one time was heralded as a successful remedy for tuberculous conditions. We are not hearing so much of it lately, since some unpleasant and alarming experiences with the large doses have made physicians more cautious.

Rheumatism is a condition caused by non-neutralized acid poisons of protein metabolism, and sodium salicylate was thought at one time to be a specific; but the truth of



Filling the syringe.

the matter is, we can have no specifics, because of the wide variations of the constitutional conditions of our patients. Anything that will restore normal resistance and metabolism is a specific for that condition in this particular patient, but not so in his brother, who fails to respond to the same treatment for apparently the same condition.

Iron and Other Reconstructives

Iron, sodium, potassium, calcium, magnesium, phosphorus, and creosote in various combinations have been used for diverse conditions, including anemia, neurasthenia, skin diseases, pretuberculous conditions, and exhaustion following protracted illness. It is surprising how quickly these patients respond to the iron and phosphorus solution.

Some Uses of Mercury Intravenously

In the early manifestations of syphilis, also in septic infections, mercury has been remarkably satisfactory, and Doctor Hanor, Doctor Jones, and a French physician (whose name I cannot recall) report very prompt results in cases of chronic malaria. Doctor Hanor writes me as follows:

"After receiving your suggestion relative to the case of chronic malaria that failed to respond to the 10-grain doses of quinine and urea bimuriate, I gave the patient 1-40 grain of mercuric chloride. The patient showed improvement after the first injection, and his temperature soon became normal; the symptoms are all clearing up and the blood stream shows no malarial parasites. An Indianapolis physician reports a very interesting case of malarial infection com-

plicated with a gonorrheal rheumatism. He thanks me for my suggestion and adds: 'I am giving mercuric chloride, 1-30 grain in the solution, every third day, and my patient looks and feels like another person after having received but two treatments.' A case of sepsis following an abortion cleared up promptly after two injections twelve hours apart."

Mercury has always been a valuable remedy, but the prompt action, without danger of salivation, enhances its value many times.

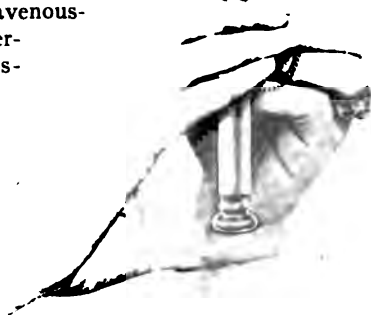
Iodine is another remedy that has produced some brilliant results, as well as failures, through the intravenous route.

Sodium Cacodylate

Cacodylate of sodium (organic arsenic), contains 48.6 percent of arsenic, equivalent to 61.8 percent of arsenous oxide.

Since the European war, the difficulty of obtaining Ehrlich's preparations has revived the interest in the cacodylate of sodium. Although this preparation had been highly recommended by eminent men, many failures were reported, due to the fact that the doses given were too small.

Sodium glycerophosphate and various other preparations are now being extensively given intravenously, with perfect satisfaction.



Proper position of the syringe in expelling the air.



Distending the vein after the needle is inserted.

The fact that hundreds of physicians are administering remedies by the intravenous route does not mean that it has no danger. Thousands of men are opening abdomens every day, but you would not say there is no danger. The utmost care must be taken for this simple procedure, the same as for opening the abdomen. Cleanliness and godliness are near relatives, and dirt and the devil go hand in hand. No physician who is not clean in his personality and habits has any business with the scalpel or the intravenous needle. The blood stream will not tolerate dirt without making a fuss.

If you want to take up the intravenous treatment, *be clean*. Never undertake a treatment without boiling your syringe and needle. Cleanse the patient's arm over the area to be treated with soap and water and alcohol. Always keep your solutions tightly closed and away from dust and light, so as to prevent deterioration.

There is considerable variation in the technic of intravenous treatment. If one has a hospital where he can keep the patient under observation, it is a much more impressive procedure to use the neosalvarsan gravity-apparatus and a 17-needle; to dissect out and ligate the vein, and to use a larger amount of solution; but this procedure is entirely unnecessary.

I give the treatments mostly in my office. There is absolutely no disturbance

locally or constitutionally, except very rarely a slight degree of vertigo for a moment or two.

Now for the Details

My technic usually is as follows: I use Luer syringes, the 5-, 10-, and 20-Cc. sizes, and occasionally an Underwood pressure-apparatus. I use platinum or platinum-alloy needles, 27 generally, occasionally a 26. Either does nicely. The needles and syringes, with plungers removed, are boiled for two minutes; then pour off the water,

and, while still hot, affix the needle and pour the solution into the syringe; then place the plunger into the opening of the syringe and invert. Thus, in pushing the plunger into the barrel, the air is forced upward and out through the needle. Now place syringe back into the dish in which it was boiled, until it is to be used. (I use a shallow enamel stewpan with handle and cover.)

Place the patient in a good light, either sitting or reclining. Cleanse the arm over the location of the median basilic vein, though any vein that shows prominently may be selected. Place a constriction (a napkin or a rubber constrictor) above the site of injection. Take the syringe in the left hand, expel the air with the right hand (unless you are left handed), hold the skin steady over the vein, then, with a firm, unhesitating pressure, push the needle through



Injecting the fluid after removing constriction.

the skin and vein-wall, using care not to thrust the needle through the posterior wall of the vessel. A little experience will enable you to tell when the needle passes into the lumen of the vein.

You can determine positively that the needle is within the vein by withdrawing the plunger slightly, when the blood will be seen coming back into the lumen of the syringe just back of the needle; but, if the light is not the best, you can see the blood more easily by slipping a piece of white paper between the patient's arm and the barrel of the syringe.

Be very careful not to inject the solution into the tissues. All intravenous solutions must be alkaline, and alkalis in the tissues make trouble and bad sloughs, which are slow to heal; and that hurts your reputation as a skilful operator. If you fail to place your needle properly, your patient will complain of its hurting—not always a pain, but an indefinite aching. Always readjust your needle, and be sure you are right before you

push the plunger down.

You should hold your needle at an angle of about 20 degrees from the forearm, and, after making sure the point of the needle is properly located, push the plunger down slowly. I usually take about two or three minutes for 10 Cc. of solution, more or less, in the same proportion.

The injection of the solution should be painless and there should be no after-disturbances, although quite often a reaction is experienced from the large doses of salicylates. These patients should be kept in bed until the reaction is over.

Many physicians attempt intravenous medication in a half-fearful fractional dose-way and they say they get no results, which doubtless is true. At the same time it refutes the often-made statement that the effect of this method is purely psychic. But the physician who studies his cases and the solutions he uses, realizes that he gets results well worth the effort.

Nonoperative Gynecology

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

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EDITORIAL NOTE.—This is the first of a series of articles upon nonoperative gynecology promised us by Doctor Rittenhouse. This is a topic in which we know a great many of our readers are interested, since we have frequently had requests for papers upon this subject. Doctor Rittenhouse will be glad to answer any questions, and we hope that the series may bring out a good many comments.

THE editor of CLINICAL MEDICINE has repeatedly requested me to contribute a few leaves from my experience in office-gynecology; and he always emphasized the idea that it should be something practical—not necessarily something extraordinary, but especially embodying my own methods of dealing with the ordinary ills of the reproductive system, for which women seek relief in the doctor's office. At first sight this subject seemed so commonplace that the readers of this journal must surely be as well informed upon it as I. After reflecting, however, three considerations occurred to me that finally induced me to write.

The first consideration was, the hunger shown by the students in my classes for every bit of practical information of this nature, and which, incidentally, might be introduced in my lectures on obstetrics. Not only have they always noted with eagerness any information on this subject, but they have almost constantly plied me with questions regarding

it, expressing at the same time their sense of the inadequacy of the help they could obtain from textbooks.

The second consideration was, my recollection of the sources from which I myself gathered most of the practical knowledge which I possess. These were not mainly classical sources, such as textbooks, or scientific papers read before the big societies, but personal experiences gathered from the rank and file of my fellow practitioners in their daily work. For twenty years I have been a member of a club of twenty-five doctors who live reasonably near each other and meet once a month at each other's house. At these meetings, we always discuss from the standpoint of our own experience some subject of practical value selected anywhere from the whole field of medical science. It is the general testimony of our members that we get more practical ideas on our work from this little club than from all the other societies to which we belong. It is the

touchstone of personal experience that transmutes this knowledge into the fine gold of practical usefulness. I often think that possibly in our medical teaching of today we may be giving too much attention to the extraordinary, and not enough to the ordinary.

My third excuse for this series of articles is the considerable number of gynecological patients who drift from one doctor to another without having obtained the relief they sought. While some of these are hypochondriacs and are only happy when drifting, nevertheless there are too many who have failed to get well because of faulty diagnosis or wrong treatment. No doubt I have unwittingly contributed my share to this unhappy army of sufferers; but I feel that with a freer exchange of experiences we might all do better work. If my experience happens to prove of value to others, I shall be glad, but I shall be more gratified still if these articles bring out from the readers of this journal suggestions of their own which I feel certain are capable of opening a mine of unsuspected richness.

How Good Things Are Discovered

Most doctors could, no doubt, recall instances like the following. I was consulted by a married woman who had not menstruated for over nine months. She was very fleshy and her doctor had too readily accepted her own diagnosis of pregnancy. When the little stranger failed to appear on schedule time, her doctor took her to a gynecologist of large experience, who confirmed the diagnosis of pregnancy but set the date of delivery further ahead. Dissatisfied, she came to me. I made certain that the woman was not pregnant at all, and suggested to her physician a line of treatment which soon restored her normal functions. Two years later, she came to me again, stating that she was having the same experience as before, that her periods had been suspended for many months, and that her doctor had used the same line of treatment which I had suggested two years previously, but this time without success. After an examination, I said to her, "you will have a baby inside of two weeks!" and she did.

Another example: I was consulted by a young woman two years married, who, during that time had suffered intensely from dyspareunia and was approaching a condition of complete nervous breakdown. In the city where she lived, she had been treated unsuccessfully by her physician and finally had been taken to a hospital and had both ovaries

removed—at least, so she was informed. She had a laparotomy-scar, but the ovariectomy could not have been complete, for she became pregnant later. After the operation, she had grown worse instead of better. I found the cause of her dyspareunia, namely, a large and intensely sensitive urethral caruncle. Its removal, followed by appropriate treatment, entirely cured her dyspareunia in less than a month. By the way, the surgeon got \$200 for the laparotomy; I got \$25 for curing her. That was all she had left.

But I need not multiply instances. I merely wished to emphasize the fact that slovenly diagnoses are deplorably frequent, and perfunctory routine methods of treatment equally so.

Before proceeding to the consideration of individual conditions and their treatment, I want to say a word about diagnosis and methods of examination.

Concerning Diagnosis

There are some men who seem to have a genius for diagnosis. They seem to see what ails the patient by instinct. The apparent ease and certainty with which they do this is sometimes quite discouraging to us ordinary mortals, especially in our early years of practice. Someone has said that genius is merely the capacity for taking infinite pains. While this may not be literally true, it nevertheless contains a great truth. The beginner who looks enviously at the skill shown by the trained diagnostician has it in his power to reach in time the same envied accomplishment. But he must remember that success can only come by patient observation, system, thoroughness, and everlasting perseverance. The way to learn how to do a thing is, to do it—and keep on doing it. And then all this must be vivified by breadth of view. The narrow man will never become a good diagnostician. He is unable to rise above rules. Rules are good servants, but bad masters. Only through the trained judgment can real broad-mindedness be acquired.

Confidence in one's self is another requisite in making a good diagnostician. If I may be permitted to make a personal confession, I will say that it was only after I began to have some consultation-practice that I began to do my best work in diagnosis. The fact that others had confidence in me gave me confidence in myself, and my work improved accordingly. One should always keep before one's mind the resolution, "What others have learned to do I can learn to do."

I referred above to the necessity of the examiner exercising observation, system, thoroughness, and perseverance. These qualities are all indispensable, and it would be difficult to say which one is the most important.

The average human being is a poor observer and, so, most of us are compelled to acquire the art of observation by training. This training ought to be largely acquired in medical college, but the modern course is so crowded with things which the student is expected to memorize that he has little time for real training of his powers of observation. It would be of great value to every student if he could have a thorough course in some one of the natural sciences—botany, for instance—just for the purpose of developing his observing powers. So true is this that the doctor who, as a matter of recreation, takes up the study of botany or geology or entomology finds himself well repaid by becoming a better observer, to say nothing of the benefit to health gained by outdoor study.

System, too, is of the utmost importance in examination. From lack of system, the examiner often finds that he has omitted or overlooked something that was very important for him to know. The use of a system does not necessarily imply the use of a case-record—a printed form with a long list of questions. Those who like this method no doubt derive benefit from it, and I am free to admit that it has some advantages. But it has never proved quite satisfactory in my hands. When one has to get through a crowded office-hour on schedule-time, I prefer to get at the salient points of a case by a few incisive, well-selected questions, to make a few important notes, and then proceed to a thorough physical examination. In this matter, as in some others, I have, during the past thirty years, revised my methods in the direction of greater simplicity, with benefit to myself and with no loss to my patients.

Thoroughness in physical examination is, of course, so essential that no argument need be wasted upon its importance. But the need of thoroughness is no excuse for the brutal roughness of some doctors. Men of a certain mental caliber profess to believe in a philosophy which they express as follows: "The more you hurt them, the better they like you." This bit of wisdom (?) is about on a level with that formula occasionally heard from the laity regarding a doctor who drinks: "Doctor A. drunk knows more than the other doctors sober."

To be kind and considerate, to avoid inflicting unnecessary pain, to show due consideration for a patient's feeling of delicacy, these things pay in dollars and cents, even if we ignore higher motives.

In this series of articles, I shall not attempt to present an exhaustive survey of the whole field of gynecology, but shall simply select such ailments or such methods of treatment as seem to possess decided interest.

Endocervical Catarrh

One of the commonest conditions met by the gynecologist is that of catarrh of the cervix, often called "ulceration" even when no true ulcer exists. This condition is met with at all ages, in the single as well as the married, in nulliparæ and in multiparæ. In women who have borne children, it is often the result of laceration of the cervix and the accompanying eversion. The lips of the torn cervix are widely gaping, exposing the interior of the cervical canal, which has an eroded appearance, with an intensely catarrhal condition of the muciparous glands.

Where there has been no cervical laceration, we have a similar condition, but less intense; although, if the condition is of long standing, there may be erosion around the external os, even to the extent of true ulceration. The marked characteristic which all these cases have in common is, the mass of tough, thick, ropy mucus that fills the cervical canal and adheres so firmly to its walls as to defy all ordinary efforts for its removal.

Catarrh of the cervix is generally regarded as a symptom of some other and deeper-lying pathologic condition, but we often see cases where no cause can be found and where successful treatment leaves the patient perfectly well. Possibly in such cases the catarrh was caused by a temporary condition, which recovered spontaneously while the catarrh persisted. An abortion or a uterine misplacement I believe will often start a catarrh that may persist long after the original condition has gotten well.

Among the commonest causes of endocervicitis are: uterine misplacements of every kind, all sorts of infections, including those resulting from attempts at abortion, subinvolution following parturition or abortion, and so forth.

The symptoms vary greatly. In some cases, there is backache or general pelvic discomfort. In others, the symptoms are almost *nil*, and the only thing that brings the patient to seek relief is, the inconvenience of a more or less offensive vaginal discharge.

The diagnosis presents no difficulties. The characteristic plug of mucus protruding from the os is easily recognized. If a lacerated cervix exists, the examiner should not fail to recognize it, for he cannot hope for a cure without repairing the lesion. Failure to recognize this condition is a diagnostic error which occurs oftener than it should.

The Treatment of Endocervical Catarrh

The reason why I have selected catarrh of the cervix for first discussion is, aside from its frequency, the fact that in my early experience it was one of my most difficult problems, a most intractable condition, while now it is one of the most manageable. The difference lies in the use of common tincture of iron. Since I have learned the effectiveness of this simple remedy it has been a constant source of wonder to me why so few gynecologists use it. While it is one of the remedies for this condition mentioned in the textbooks of twenty-five years ago, its true value does not seem to have been appreciated.

The real problem in treating endocervical catarrh is two-fold: first, thoroughly to remove the tough cervical mucus, and, second, to make an application to the diseased surface that will control the catarrh.

Various methods have been suggested for removing the mucus. If it is not thoroughly removed, the remedy applied will be ineffective. The most common method is, to attempt to suck it out by means of a long-nozzled syringe. But the removal is imperfect and it is not an easy matter to keep such a syringe clean and aseptic.

The tincture of iron solves the problem to perfection, provided certain simple precautions are observed. One danger is, to use too much, and so cause unnecessary pain. Another point is, to allow a minute or two for coagulation to take place.

A bivalve vaginal speculum is introduced. A cylindrical one will do, but affords less room. With a wisp of cotton in the dressing-forceps the parts are wiped as dry as possible, so as to avoid having the iron solution run where it is not wanted. Then a bit of cotton is wound on the end of a probe, not brush-shaped, but cocoon-shaped, very snug and firm, and not

too large. These little details are important, as experience will soon show. The cotton is dipped into tincture of iron, the surplus carefully removed so it will not run, and then the application is made inside of the canal being careful not to go through the os internum, as a bit of the iron getting into the uterus would cause severe pain—uterine colic. The application should be rubbed against the inner wall of the cervical canal for a few seconds and then withdrawn. After waiting a minute or so for coagulation to take place, the probe is again used, this time with dry cotton. The mucus is now in curds and can easily be removed, leaving the canal clean and dry if the amount of iron used has been correctly gaged. Any other desired remedy may be applied to the catarrhal surface, of course, but I have found that in many cases this is not needed. The iron not only helps to clean the canal, but is one of the best curative applications we possess.

Formerly I thought it necessary to follow the removal of the mucus with a swabbing of tincture of iodine and the placing of a vaginal tampon of cotton soaked in glycerin; but I find that most of my cases improve just as rapidly on the iron alone. As stated above, my tendency is toward simplicity of treatment. Where there is noticeable enlargement of the cervix, or subinvolution exists, it is well to apply the iodine and place a glycerin tampon, and also to order daily douches of large quantities of hot water. The patient should be instructed to use the water quite hot and have it flow very slowly.

In those cases where laceration of the cervix exists, the above treatment should be used for a time to put the parts in good condition for a trachelorrhaphy. It is not difficult to get improvement, but it will only be temporary if the tear is not repaired.

When I consider the formidable list of powerful caustics that have been recommended for the treatment of endocervical catarrh and the instruments that have been devised for the same object, I am inclined to marvel that this simple and successful iron treatment is so little known and appreciated.

(To be continued)



The Abuse of Surgery

The Cataphoric Use of Thiosinamin in Gynecology

By FRANK B. PATTERSON, M. D., Marshall, Michigan

A FEW decades ago, before medical science had made the progress that it has in recent years, and with the consequent development of various specialties, any medical graduate was considered competent, not only to prescribe for the sick such drugs as were indicated, but also to perform any necessary surgical operation. The technic of general surgical work is, as a rule, simple and, if economic conditions were the same now as then, the family physician would still be using every means at his disposal for curing his patients.

Now all this has changed, therapeutic nihilism being most rampant and operations altogether too fashionable; and such people as are unwilling to undergo surgical operations, and fail to get relief at the hands of the family physician, are driven to the quacks. It is, indeed, surprising, nowadays, from what a physician observes during consultation, how little, in fact, the average doctor really knows about the physiological action of drugs. Some even go so far as to boast that they can get along with only a very few drugs, overlooking the fact that of several remedies having very nearly the same physiological action no two really are identical in effects: for there are many fine shades of action that the true therapist appreciates, but which the rank and file of the profession carelessly overlook. One ought not even to confine himself entirely to one school of medicine; for, though he may have been educated as a regular physician, it is a serious mistake to overlook the good things offered in the materia medica of the eclectic and homeopathic schools.

Nowadays, if the family physician can possibly find some excuse for so doing, he rushes a patient to some hospital for an operation. The surgeon, of course, does not dispute the diagnosis of the family physician, as it is against his principles to turn down a big fee; and, thus, many operations are performed, the unnecessary as well as the necessary. It is, as we all know, a noteworthy fact that many a healthy appendix has been removed and that tubes and ovaries have been sacrificed galore.

Instructions in Therapy at Fault

Why has the modern physician thus lost his individuality, especially in an age like

this, when medical science is progressing by leaps and bounds?

Looking back upon our college-days, we can see that in the light of present-day needs too little attention was devoted to the subject of materia medica and therapeutics, and that, of what time was given to that subject, there was a disproportionately large amount spent on the botany and pharmacology and not enough on the actual relation of the drugs to the disease-conditions which they were intended to combat. Also in the textbook and clinical instruction, in the practice of medicine, the students' attention was devoted mostly to diagnosis and pathology, while treatment was hurriedly passed by, with too much stress placed on authority. Consequently much misinformation was imparted that later had to be unlearned in actual practice.

With this crude and confused instruction in therapeutics, is it any wonder, then, that the proprietary-medicine manufacturers get in their deadly work, causing, as they do, many an otherwise promising physician to degenerate into a mere distributor of quack nostrums?

One of the most important reasons why surgery offers so much more alluring a field than does medicine is, the great discrepancy in the fees paid for work in these two branches of the profession. Moreover, though medical fees vary greatly in different portions of the country, surgical fees everywhere remain on the same high level. If one is in the profession—as unfortunately too many are—for merely what he can get out of it, and medical fees continue to remain so low, is it any wonder, then, that so few try to keep abreast of the times so far as their medical cases are concerned? For, the better a therapist a physician is, the more quickly he cures his cases, thereby making fewer professional visits and consequently receiving less remuneration; present conditions thus place a premium on incompetence and inefficiency.

Now let us take a hasty glance at the surgical aspect of the situation. Many a doctor with combined surgical and commercial aspirations secures a private dwelling in some small town and fits it up for a hospital, offering general practitioners commissions on surgical cases sent by them to his institution. On the surface, that seems only fair for the

surgeon, whether he be a city celebrity or one located in a smaller place, thus to divide his fee with the family physician, especially when medical fees are so contemptibly small as compared with large surgical fees that must be forthcoming before the patient goes onto the table. But, when in consequence of this division of the fee the element of graft enters the entire profession and many needless operations are performed and public sentiment is worked up to the point of actually considering it a distinction to have been operated upon, then this division of the surgical fee should be considered in its own true light, along with abortions, as a criminal traffic in human life.

Thiosinamin Cataphoresis for Cervical Scars

The long train of symptoms and conditions of chronic invalidism in women, due to a lacerated cervix, is well known to the profession. Up till about four years ago, I used to resort to trachelorrhaphy as a means of cure and became quite proficient in the performance of that operation. Of late years, however, I have been resorting to a better and safer line of treatment, so far as the patient is concerned; namely, thiosinamin administered cataphoretically. This method has the advantage over surgery, in that the cicatricial tissue is completely absorbed, rendering the cervix soft and pliable and thus reducing the danger of relaceration, at the next confinement, to a minimum.

In trachelorrhaphy, although the cicatricial tissue is trimmed out with curved scissors, still, no matter how good a job is done in the coaptation of the denuded surfaces, more cicatricial tissue—though less in amount than that removed—is unavoidably formed in the operative wound; and this is subject to a very severe strain during labor, while being less able to resist than is normal tissue.

The better and safer method of thiosinamin cataphoresis has the serious disadvantage, however, that it requires a course of treatments covering a period of about three months, the patient taking two treatments a week, except during menstruation, till altogether from 18 to 30 treatments are taken, as determined by the severity of the laceration and the strength of current tolerated. She is not detained from her usual duties, except that immediately following a treatment she must keep off her feet for a few hours.

How the Method Acts

Thiosinamin, being electropositive, is given off from the positive pole of the galvanic cur-

rent and, in seeking the negative pole, passes through the cicatricial tissue of the affected parts, which it disintegrates. As salts of copper or other corrodable metal, are given off from the positive pole if an electrode of such a metal to that pole is used, the electrode here should be of platinum.

To this pole, absorbent cotton wet with a solution of thiosinamin, made as follows, is applied: Glycerin, fl. drs. 2; distilled water, fl. drs. 6; thiosinamin, grs. 40; sodium chloride, grs. 5. The glycerin is added to render the thiosinamin more soluble in water, while the alcoholic solution would interfere with its diffusion by means of the electric current. [There is a standard solution of thiosinamin on the market containing antipyrin in glycerino-aqueous solution, which seems to meet the condition admirably.—Ed.]

With the above solution applied to the cervix on a platinum electrode attached to the positive pole, a large copper pad electrode is applied to the negative pole and placed on the abdomen or on some other indifferent part of the body, then the current is gradually turned on until it registers from 15 to 30 milliamperes, according to the tolerance of the patient, and is continued for ten minutes. If there is also an adherent displacement of the uterus, the same treatment is likewise applied for the same length of time to the vault of the vagina. Following the galvanic current, the faradic current, with about thirty interruptions per minute and of a strength not sufficient to be uncomfortable, is applied to the affected parts for about five minutes, the object being to stimulate the circulation and carry away the disintegrated cicatricial tissue.

Two Cases

Some years ago I had on hand at the same time two parallel cases of laceration of the cervix with adherent posterior displacement. One of these patients stayed by me three months and was cured, but the other had a hysterical spell, sent for another doctor, who soon took her to some surgeon for an operation, and in a few days she was brought back in her casket. Likewise recently I had two other parallel cases of like nature, the one remaining by me till cured, while the other passed through some other physician's hands to a surgeon in a neighboring town. A bungling operation was performed, and a few months later the patient came back for another, which finished her earthly career.

It is not my purpose to decry the legitimate use of surgery, but simply its abuse. If

there were no financial incentive for physicians to refer cases to surgeons, it goes without saying that there would be fewer cases thus referred. Also, if every sudden death after an operation were subject to a coroner's inquest, surgeons would be more careful to be absolutely certain concerning its necessity before performing any operation.

However, under present conditions, there is all the incentive in the world to operate and no inducement other than the patient's welfare to devise other and safer means where the necessity of an operation is not obvious. Had I referred cases such as above mentioned to some operator, I should have avoided the responsibility of performing the operation myself and at the same time saved myself the exasperation involved in a long course of treatment, such as a patient's being negligent about observing appointments or of taking a few treatments and discontinuing. I would simply have had to take my patient to the

hospital and have had my commission in my pocket before leaving, and would have had at the start as much as I finally did receive after a long course of treatments.

Take it as a whole, one cannot really blame a physician who takes this course, gets his money at the start and saves himself a great deal of annoyance. The fault is not with the physician who does so, but with the system which permits him to. It is not with surgery, where legitimately employed, but with the graft in surgery. If severe penalties were imposed upon the giving and receiving of commissions on surgical cases, there would also be less incentive for entering the medical profession, as the surgical field would be greatly contracted. Also, there would be much more incentive for followers of the medical profession to become more proficient in the therapeutic art, which is now rather undervalued. In other words, there would be fewer and better physicians.

Alcohol: Its Influence Upon Mind and Body

The Doctor's Verdict

By EDWIN F. BOWERS, M. D., New York City

Author of "Side-Stepping Ill Health" and "Alcohol, Its Influence on Mind and Body"

IS ALCOHOL a stimulant or not? Has it any right to be classed as a medicine, as many conscientious physicians assert, and, if so, what right? These are questions that have puzzled scientists, and split asunder the camps of the learned.

It must be admitted that the almost universal belief of humankind—including many doctors—that a "good drink" is a "bracer," sows the seed for a powerful mental suggestion in that direction. In other words, the psychological stimulant influence exerted by alcohol upon one dangerously ill might on occasion weigh the scales of life in such a one's favor. But, if this patient had the same faith—as many have—in an amulet, in pills made of bread, or in any other inert and innocuous substance or treatment, he would derive from it the same or even greater benefits. At least, he would suffer from them no reaction, such as follows the use of the narcotic drug alcohol.

Usefulness of Alcohol Disproved

However, there is no longer any excuse for giving alcohol as a medicine or as a stimulant. For, apart from its temporary reflex action,

due to its irritating effect upon the delicate mucous-membrane lining of the stomach, alcohol, if it has any action at all, is a depressant.

Alcohol, given in diluted form, so as to avoid excitation by direct irritation, has been repeatedly given to dogs and men, without causing the slightest appreciable beneficial effects upon the heart's action or the circulation. Given in concentrated form, alcohol quickens the heart's action in perhaps a slightly more marked degree than do mustard, essential oils, and other irritants, but it falls farther afterward. The pulse pressure, which is temporarily increased immediately after the irritating reflex action of the fiery liquid, is permanently decreased. In other words, the pulse, after a momentary increase in volume, becomes smaller. So, if you want a temporary "kick," without paying too high a price in loss of energy for it, it would be far better to take a capsule of mustard or red pepper to accomplish this purpose.

The experiments which settled this complex problem are highly technical in their nature and were made under the strictest test-conditions and the use of the

plethysmograph, sphygmomanometer, and other instruments of precision for estimating and recording circulatory and blood-pressure changes. Most elaborate series of tracings have been taken—tracings that to the trained eye of the clinician are incontrovertible proof of the contentions of the experimenters.

Rise of Blood Pressure Temporary Only

Suffice for our purposes, however, to say that when moderately strong alcohol (mildly diluted whisky, brandy, etc.) was administered the local irritation of the drug produced a reflex rise in blood pressure and an acceleration of the heart's action, this reaching its highest in about one-half hour, and then it was invariably followed by a corresponding depression. When, on the other hand, whisky or alcohol (well diluted and, hence, not irritating) was employed, neither the maximum nor the minimum blood pressure showed the slightest variation that reasonably could be attributed to the action of alcohol.

Cabot concludes that, "so far as could be determined, the action of alcohol upon the circulation was *nil*," for, in none of the many experiments was there observed any marked change in the heart rate or blood pressure within one half hour of the administration of the alcohol, unless very large doses were employed. Then it was found that alcohol acted invariably as a circulatory and respiratory depressant. This depression was most marked upon those in greatest need of stimulus, as in typhoid or other septic cases. So, the more a patient needs a stimulant, the less he gets—from alcohol.

Therefore, while alcohol in concentrated form may act as an apparent circulatory stimulant, it cannot be regarded as a true tonic or stimulant, inasmuch as it decreases the heart's efficiency and lowers the pulse pressure. Alcohol has no more claim to be considered a tonic or a medicine than has oil of mustard or a red-hot potato.

So, then, the diversity of opinion among physicians concerning the value of alcohol lies in its psychic effect upon patients who are habitual users of the drug, in whom it buoys the spirits and engenders hopefulness and courage. This same effect, however, can be secured equally well by the administration of other remedies that give all the stimulating effects of alcohol on the physical organism without any of its depressing after-results.

Even the famous Professor Ewald, of Berlin, who has been widely quoted in defense of the therapeutic value of alcohol, now

gives it only in certain forms of diabetes, particularly in incurable cases, in order to divert the mind of the patient from dwelling on the hopelessness of his condition. Others, under similar circumstances, might with equal propriety prescribe morphine and recommend its indiscriminate use.

The decided advantages of a nonalcoholic over an alcoholic régime in private practice and hospital-work is now quite patent to the profession at large. Indeed, it is even contended that the physician who prescribes alcohol in this era of advanced knowledge concerning alcohol and disease is unjust both to himself and his patient. And the time may not be so distant when to prescribe alcohol in sickness will be considered malpractice. For, alcohol has been proved entirely too lath-like a weapon to oppose to death when the stake is life.

Many conscientious physicians nowadays refuse to prescribe alcohol or even medicines in an alcoholic menstruum; not alone because of the evil effects of the drug upon the system, but also for fear of arousing a dormant alcoholic craving in some susceptible patient. For, not infrequently an intense desire for alcohol is flashed through deficiently resistant cells by a doctor's incautious alcohol-prescription. None can say when or where atavistic traits may flare up. A youth may have had a grandfather who was an alcoholic—so powerfully addicted that he transmitted the craving to his grandchild—jumping, as is the biological way, a sober generation, only to work sinister havoc upon the next one. The results are obvious.

The Pernicious Medicated Wines

This brings us to consider "medicated" wines, possibly the most pestiferous and pernicious insult to the intelligence of the human race that has ever been perpetrated. These almost invariably contain a relatively large percentage of alcohol, besides various other substances—such as malt, beef-extracts, pepsin, even coca-leaves, and sometimes rum. Wines that contain coca-extract have frequently been responsible for the formation of the cocaine-habit—one of the most dangerous and insidious of drug-habits and perhaps of all the most difficult to cure.

Most people who take medicated wines are honestly deceived by them, since they look upon them as medicine rather than as "booze." Some even imagine that the presence of the beef-extract, malt or iron renders the "dope" harmless; which, though, is far from true—indeed, the very opposite

is the fact. Pickling malt or beef-juices in alcohol lengthens the period required for their digestion and thereby renders them less wholesome as food—for, of course, they can have no medicinal action, as such. A few cents' worth of freshly made Bland's pills will give far better results than a dollar-bottle of "iron tonic"—and without risking acquiring the alcohol-habit or poisoning the protoplasm with an exceedingly cheap quality of whisky.

Now, within the memory of many of us who are only slightly gray, it used to be thought that a jug of whisky, a barrel of codliver-oil, and a glad, free life in the open air constituted a sure cure for consumption. But we know better now. We know now that whisky is "bad medicine," and especially bad for lung diseases, because of its effects upon the blood-vessels, and the phagocytes, besides its lowering influence on the general resistance.

Dr. Jacques Bertillon, chief of the Bureau of Municipal Statistics in Paris, and world-renowned as the originator of the famous Bertillon system of measurement—has given it as his opinion that alcohol may well be called the principal cause of tuberculosis. Supporting this contention, he cites the mortality statistics of one hundred thousand men of all ages, which show the death rate among abstainers to be less than half that of alcohol users—21.8 percent among alcoholic patients, as against 9.9 percent among abstainers.

Alcohol and the Respiratory Organs

In a study of 500 cases of tuberculosis, the use of alcohol was followed by a 40-percent higher mortality than occurred among those receiving no alcohol. In France, similar results were observed—immoderate drinkers dying in proportion of 52.8 percent; moderate drinkers in 25 out of 100 cases; while abstainers had a mortality of only 18.5 percent.

There is no doubt that alcoholism is the barometer of tuberculosis. The International Tuberculosis Congress, meeting recently in Paris, affirmed this relationship, when it officially proclaimed the necessity of proceeding against both, if tuberculosis were to be vanquished.

Also, the poisonous effect of alcohol on the circulation causes congestion, the formation of toxins, and the retention of waste material. The extra labors placed upon the heart, in an endeavor to overcome this condition, quickly result in fatigue, and this falls most heavily upon the lungs and nerve-centers.

This helps to explain also the diminished resistance of alcoholics to pneumonia, as well as to tuberculosis and other lung diseases. This latter fact was emphasized during a recent antialcoholic congress in London. A study of more than 2000 cases of pneumonia, half of which were treated with alcohol and half without, showed a mortality of 31 percent when alcoholic "stimulation" was resorted to, and only 19 percent in those in which alcohol was taboo.

In two large cities in the East studies of death from pneumonia educed the significant fact that, in patients under fifty years of age, from sixty-five to seventy percent of those mortally stricken had an alcoholic history.

And this suggests that, if singers only realized the pernicious effect of alcohol—especially upon the delicate mucous-membrane lining of their respiratory passages and "voicebox"—they would embrace it with the same ardency and joyous abandon that they would a pestilence. For, alcohol, by its hardening and toughening effect upon the squarefoot of delicate mucous membrane which the singer uses in his business, causes the outer layers of this membrane to degenerate, so as to be utterly incapable of performing normal functioning, until such time as new tissue shall have been created to replace that destroyed by the alcoholic erosion. This fact also accounts, in part, for the hoarseness and the exaggerated resonance of the "morning-after" voice. Naturally, this effect is more pronounced in those who take their whisky, cognac or brandy "neat." Still, those who dilute their "dope" or who drink mild liquors, wine or beer get the same effect, in degree.

Other Evil Results From Spirits

This is proved by the catarrhal condition of the pharynx and vocal passages that is excited by an allopathic indulgence in beer or light wines: the relaxation of the uvula, soft palate, tonsils, and fauces is most marked.

Also, it is alcohol and patent medicines containing alcohol that are largely responsible for the prevalence of catarrh of the stomach and intestines—so frequently forerunners of grave and even fatal maladies. With true Adamic effrontery, we in America have attempted to put the blame upon woman and her reputed maltreatment of food. Be it gently suggested that the intelligent middle-class American housewife plays second fiddle to no woman in the world in the skilful preparation of appetizing, digestible, and nourishing meals. But alcohol takes from

her the wherewithal with which to purchase dainty comestibles, while depriving the man of the stomach to enjoy these dishes when they are presented.

As for cerebral hemorrhage, more than 50 percent of patients dying are regular users of spirits. Also, many so-called cases of "heart failure" and sudden collapse have the same grim history.

In Munich, investigators have worked out, with true German painstaking thoroughness, the exact relation between alcohol and degeneracy. In a city where every man, woman, and child consumes a *per capita* allotment of an average of 287 pints of beer in a year, this study, naturally, is not difficult. The alcoholic content of this amount of beer is equal to 6 glasses of brandy a day for all hands. Professor Bollinger, who made autopsies on about 6000 of them, assures us that every sixteenth male in Munich dies of "Munich beer-heart," and he adds, for our further edification, that "one rarely finds in Munich a faultless heart and a normal kidney in an adult man."

Furthermore, long experience has demonstrated that no case of rheumatism or neuritis promises a successful outcome unless alcohol be absolutely interdicted.

It Mars Woman's Beauty, Also

While not distinctly a subject of medical interest, it nevertheless may be pertinent to mention that alcohol seriously mars beauty in women. Thus, it roughens the skin and produces discolorations and pimples. By inhibiting the action of the vasomotor nerves which regulate the expansion and contraction of the blood-vessels—it causes a chronic congestion in the tiny capillaries underlying the skin; which dilation, if long enough continued, becomes permanent, because the "elastic" will have gone out of the vessels. This causes the skin to become red and flushed or in cold weather leaden or dull-purple, and produces the characteristic bulbous nose associated with alcohol drinking. Alcohol also makes the female breasts flabby, by robbing the supporting muscles of their normal vigor and tone.

And, as alcohol is responsible for much of our present-day neurasthenia, it follows that to it can properly be charged a considerable proportion of the wrinkles, crowsfeet, and haggardness of the neurasthenic. This, entirely apart from its subtle but certain effect in stamping its unmistakable stigmata upon the countenance of every woman who regularly indulges in the insidious drug.

Yet, alcohol is of undoubted value—used externally. In fevers, particularly, applied to the surface of the body, its chemical, water-absorbing, and rapid-evaporation properties give it a grateful refrigerant action. An alcoholic sponge-bath means rapid abstraction of the surface moisture of the body, with consequent diminishing temperature and relief of capillary congestion. This is the nearest that alcohol comes to being a medicine.

Alcohol Lowers Resistance

For, taken internally, alcohol is a narcotic; paralyzing, corroding or irritating every kind of tissue in the body, and the more delicate the tissue, the more pronounced the pernicious action.

Only recently it has been demonstrated that alcohol hinders the formation and the accumulation of glycogen in the liver, thus materially lessening the body's natural resistance to infection and, so, decidedly encouraging autointoxication from intestinal poisons. And the observations of Combe, Bouchard, von Norden, Bunge, and numerous other authorities have demonstrated beyond cavil the enormous role played by intestinal autointoxication both in chronic and acute disorders.

In certain kinds of work, alcohol, by breaking down resistance, renders the worker especially susceptible to disease, thereby intensifying the danger involved in the work itself. Thus, for instance, those who work with lead (as paint-makers, painters, etc.) are much more liable to lead-poisoning when drinkers than when they are abstainers, because the natural resistance of the body is lowered in trying to overcome the effects produced by the lead.

And, when the debilitating effects of the alcohol are added to the dangers of the lead, phosphorus, arsenic or what-not, the resisting forces of the body are overcome much more quickly than if only one enemy at a time is being fought.

The same principle applies also to those who are required to work in intense heat. First, because, under alcohol, the judgment is impaired and one is likely to expose himself more recklessly to the heat than he otherwise would; and, second, because his physical and his nervous resistance has been depreciated by the action of alcohol. Alcoholics, therefore, are peculiarly liable to sunstroke and heat-prostration.

Alcohol has also a pronounced and degenerating effect upon the teeth. Doctor

Floras, a pupil of the eminent von Bunge, and surgeon to the Anatolian Railway in Asia Minor, examined the teeth of 729 employees, divided into the strictly abstinent Moslems and those who had fallen into European drinking-habits.

Counting the number of decayed teeth in each class (their habits of life, except for drinking, being identical), he found that the average number of decayed teeth to each drinking workman was almost double that found in the abstinent class. In workmen between forty-six and fifty, this average rose to nearly four times as many. Professor Bunge and other physiologists have since repeatedly corroborated Doctor Floras' findings. It is also significant to note that Doctor Bunge finds a distinct decline in nursing power accompanying decay of the teeth, and he predicates both as being owing to one cause, namely, alcoholism.

So, it would almost seem, as Professor Bunge says, that, to dry up the springs of race degeneration, of which alcohol is the chief one, is a problem the solution of which admits of less delay than any other.

Authoritative Opinions

Dr. William H. Welch, ex-president of the American Medical Association, says: "Alcohol in sufficient quantities is a poison to all living organisms, both animal and vegetable." Dr. Howard A. Kelley writes: "It is clear, in the light of experience and of recent research-work, that alcohol should be classed in the list of dangerous drugs, along with morphine, cocaine, and chloral—a drug which may so affect the will-power as to gain the complete mastery over a patient and in the end destroy him. English and German physiologists have demonstrated beyond a question that the continued use of alcohol in any quantity is not only useless, but positively harmful; and, on the basis of experience, I appeal to my colleagues everywhere to abjure its use."

Dr. T. Alexander MacNichol, in one of his addresses, says: "Fifty years ago, men commonly believed that alcohol was food, tonic, and stimulant; but they were excusable for their ignorance, as little was known of the physiology and chemistry of the blood and tissues; the action of bacteria upon the functions and life of tissue-cells was a sealed book. The invention of instruments of precision and the application of more exact methods of examination have revolutionized our attitude toward alcohol. In the light of modern science, alcohol is not food, a tonic or a stimulant."

In a word, then, science has classified alcohol as a universal protoplasmic poison to all forms of organic life. And, Sir Victor Horsley remarks, "We cannot estimate what minimal amount we can safely take into our bodies and say that it will not be detrimental to our tissues."

The Society for the Study of Inebriety, concurring in the opinion of the English society, finds that alcohol has no tonic or stimulant power; that its real effects are invariably narcotic and paralyzant.

Dr. Louis D. Mason, president of the American Society for the Study of Alcohol and other Narcotics, delivered an address recently, in which he said:

"A large majority of the leading and influential practitioners of medicine and surgery in this country and Europe are excluding from their practice alcohol in any quantity and are also denouncing it in any form as a beverage. The great hospitals of Europe, on the continent, and in America and elsewhere, every scientific center reflects their action."

Dr. T. D. Crothers, of Hartford, after a lifetime's study of alcohol and its effects upon the human organism, concludes that

"The widespread use of alcohol as a beverage and the delusive theories which have grown up about it in medicine are due exclusively to its fascinating narcotic action for the relief of pain, discomfort, and suffering. It is not stimulation that is sought, but narcotism, anesthesia, and relief."

The Abolition of Drinking

So, with all these facts in mind, Health-Commissioner Goldwater, of New York City, has decided to clean up a small section of the universe by curtailing or abolishing drinking in New York. Doctor Goldwater contends that a "protoplasmic poison, lessening vital resistance, hindering the progress of the community, and fostering poverty and the diseases springing from poverty" comes properly within the scope of the activities of the health department.

So, twentieth-century expert medical testimony renders its final verdict in this:

Alcohol has no helpful function to perform for the human system, either in health or disease, as a beverage or as a medicine, under any circumstances, in any form or quantity or under any condition. It is the greatest, the most deadly, the most far-reaching, in its deleterious results, of all epidemics. There is for it no antitoxin, no vaccine—nothing but the powerful preventives of intellectual sterilization and mental sanitation.

First Aid in Injuries of the Scalp, Head and Face, and Their After-Treatment

By W. G. BRYMER, M. D., Dewar, Oklahoma

THE subject of first-aid and emergency surgery and of the after-treatment of emergency injuries presents a much broader field than might appear on first thought. Unfortunately, this important subject has received but scant attention in textbook and current literature, and I intend to consider it at some length in this series of papers, laying particular stress upon the importance of the after-treatment. It may be of value not to limit my discussion to the surgical aspect, but at the same time to consider the financial and social relations of industrial injuries, because of their far-reaching bearing.

Emergency surgery and first-aid work cannot be classed strictly under any of the subjects with which general surgery deals, because of the great variability and divergence of the problems presented. In any accident in which a number of men have suffered, apparently from the same causes, the injuries may be found to be of the most varied nature, and the resources of the emergency-surgeon are constantly strained to the utmost, to devise means and procedures for the suitable correction of the injuries and the attainment of the most useful results. Often the difficulties of the surgeon are aggravated by an entire absence of suitable first-aid material, so that, in consequence, the liability of the employer is increased, since an injury which by proper first-aid attention might remain a comparatively simple one will become complicated by infection through careless or ignorant handling; and not only will the damages to be paid be higher, but the ultimate usefulness and earning-power of the patient will be correspondingly diminished through the primary inefficient handling. It should be incumbent upon all industrial corporations to train their employees in the proper administration of first aid.

Lesions of the Scalp

Nearly all scalp wounds are infected, especially if caused by some blunt instrument by which the hairs are driven into the wound, while the clean cut, as a general thing, is closed automatically or by a blood clot and is not so likely to get infected. An abrasion or a contused wound is often overlooked and later becomes infected.

When you have a wound of the scalp to deal with, always be sure to give it the most careful consideration and antiseptic treatment, thoroughly cleaning it and then swabbing it freely with tincture of iodine. This is one of the best antiseptics for scalp wounds that I have ever used. It causes a rush of phagocytes to the field, which form a wall around the wound and prevent systemic infection, while, moreover, the iodine hastens repair through the production of inflammation to which it gives rise.

Large bruised wounds of the scalp should not be closed with ligatures, for trouble will surely follow. Rather cleanse the wound well with a 1 : 5000 iodine-solution or with alcohol, then apply tincture of iodine in full strength over whole surface, then cover with the sterile dressing. The results of this procedure are highly satisfactory, and you will be surprised, when you dress the wound the second time, to find that the ugly-looking sore, which you had at first, has changed to a simple wound that will give you no trouble.

On the other hand, suturing will invariably lead to suppuration and produce a bad wound. Scalp wounds heal better if they are left open.

These wounds have a tendency to heal rapidly if not infected, but, if infected, they generally prove most stubborn and are exceedingly dangerous; for, it seems that the absorption from the infected area very readily invades the blood stream and sets off a blast, so to speak, that destroys your patient's resistance very quickly. And then it requires heroic work to save his life.

In these infected cases, local antiseptics do very little good. It is necessary to supply the blood with an antiserum, in order quickly to fight the invasion of the enemy. My custom is, to inject directly into the vein a mixed serum that includes the antitetanic.

If the scalp wound penetrates through the scalp and periosteum of the skull, and the skull is fractured or mashed in, then you have on your hands another grave problem, probably concussion of the brain or blood clot and hemorrhage. In this case, invariably the patient will be comatose or, if not comatose, have paralysis of a limb or of the side opposite to that on which the trouble is located. The pulse is slow and the blood

pressure low. If the injury is frontal or occipital, the paresis of the extremity is absent, but there is always coma, low blood pressure, with reaction of the retina absent.

The first step in these cases is, to cleanse the external wound and rush the patient to the office or hospital, anesthetizing the scalp and periosteum with cocaine, 1-10 percent, and adrenalin chloride, 10 minims to 1 ounce of physiologic salt solution. Go down to the bare skull, remembering that the bone does not need anesthetizing, as it has no sensation. Trephine always. Raise the depressed portion of the skull, find the hemorrhage and the clot, remove the clot and stop the hemorrhage, again remembering that the brain-substance does not need to be anesthetized, for, like the bone, it is without sensation. Several times while I did this kind of work, the patient, after I had removed the clot and controlled the hemorrhage, became rational and talked while I was completing the work.

The main points, to which I want to call attention here, are, surgical cleanliness and ability to diagnose the trouble and its location. This can be learned from textbooks upon brain wounds, including locations and symptomatology. If you can get early to these brain-cases associated with fracture, concussion, clots, and hemorrhages, and are able to make the diagnosis, proceed. Do not wait, for, in my opinion, 90 percent of these cases end fatally for the want of early diagnosis and treatment.

If it be a clot and the hemorrhage has already ceased, haste is not important; but, how are you going to know that the hemorrhage has ceased? Look to the blood pressure and pulse. I have gone into some of these cases, alone, quickly, with local anesthesia, and have controlled the hemorrhage, with recovery of patient. Had I waited an hour, the case would have been hopeless.

Knowledge, combined with technic, will often save life where technic with procrastination means death. The emergency-surgeon must early learn to rely upon himself, and not upon his competitor. By this I do not mean that one should be overzealous to do one's work alone; but, when emergency demands, be ready and sure, then go to it. There is not a court or jury in the land but that will recognize your work.

Wounds of the Forehead

There are a few minor, but very essential, points in the surgery of scalp and face that are of importance. I refer to the repair of

wounds on the forehead and eyebrows, in which bad scars can be avoided by the use of metal sutures. Stitch-sutures invariably leave their traces, but a sterile metal suture will not do so. Be sure to get the edges of the wound duly approximated and carefully apply metal clamp-sutures tightly enough to bring the cut together firmly but not too tightly; then apply a soft sterile dressing. By this method, the scars will be very slight, also the corporation will save some money, for disfigurement or ugly scars on the face or forehead will speak louder than any attorney's words of rebuttal can do.

My usual procedure is, to cleanse the wound thoroughly, swab it with tincture of iodine, apply metal sutures, and then apply a sterile dressing; dressing on the third or fourth day and removing the sutures at the second dressing, because the wound has been closed sufficiently by the serum thrown out to secure complete union. If possible, do not use water in dressing wounds. After removing the stitches, I usually apply pure tincture of iodine to the places where the teeth of the metal sutures have made their mark. Under this procedure, I seldom get a scar larger than a sewing-thread. An exception must be made in case of coal-miners, in whom a dark-blue line will be found instead of the white thread-mark scar-line. I have endeavored to overcome this, but so far without success. It is said that, if the coal-miner wants to produce positive proof of his identity as such, he will show some scar upon his body as his badge of the fraternity.

Another factor in scars of the face is their depth and length, and their direction upon a muscle. All deep scars I always close by making sutures of catgut, commencing just beneath the skin, coming out just beneath upon the opposite side and then closing the skin with the metal suture. This procedure has always proved very satisfactory. It is an advantage of metal sutures that, if a wound becomes infected, the metal stitch is easily removed and you can get to the seat of infection at once; still, if proper precautions are taken by swabbing the wound with tincture of iodine, infection will follow in less than 1 percent of cases.

I am talking about emergency-wounds that are seen within the hour, not those of several hours' standing. In over 1000 emergency-treatments done within the hour, I have seen less than 1 percent of infections. This may seem remarkable, but it is a fact. I treated 500 cases of two to three hours' duration, with

infection in 10 percent; 100 cases of from three to twenty-four hours' duration, with infection in 25 percent; and 30 cases of from twenty-four to eighty hours' duration, with 75 percent of infection.

If we use our utmost skill and knowledge, we may reduce the loss of time to the patient

and corporation, also the resulting disfigurement. Remembering that the infected wound of the forehead and face will invariably leave a scar, we must give our most energetic assistance to this part of our work, in order to prevent or overcome infection and diminish the resulting disfigurement.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

Medical Director of the Mudlavia Sanitarium

[Continued from page 517, June issue.]

The Physical Effects of Massage

FOR the reason that friction and motion produce heat, the physical effects of massage are thermic in character. Because of its direct irritation of the skin and vasomotor nerves, massage forces increase of arterial pressure, the necessary consequence of which is stimulation, both of the manipulated area and the parts near by; even the entire organism may be included. When, the stimulation being continued, the arterial pressure is maintained above the normal physiological level, there must eventually come a reaction which, in the form of fatigue of the muscular coat of the arteries, is coincident with depression of the heart. Then the cutaneous vessels dilate, the deeper vessels are relieved of their load and the heart is lightened.

The strong influence of massage on the circulation may be illustrated by the effects of a vigorous and prolonged manipulation of the abdominal contents. The intraabdominal vascular pressure increases, inducing such a lessening of blood pressure in the farthest-removed regions that the feet grow cold and there is intracranial anemia. Insomnia often may be relieved by this treatment.

The antipyretic action of massage is due to the fact that surface stroking raises the heat-radiating power of the skin. In the treatment of typhoid fever, the cold-rub, combining, as it does, the antipyretic virtues of hydrotherapeutic applications and massage, is practical and efficient.

Classification of Massage

Massage is usually classified, for clinical purposes, as (1) effleurage, (2) petrissage, and (3) tapotement (vibration).

1. *Effleurage* includes all those forms and varieties of manipulation which, consisting of pressure evenly applied, are continued in a definite direction. The hand, the finger or a roller instrument may be used, and, if the effect is to reach the deeper structures and not culminate in or near the skin, a lubricant may be applied. Effleurage, of course, usually is directed centripetally, in a direction opposite to that of the arterial circulation.

2. *Petrissage* is the kneading of a part between the operator's hands or fingers, or between them and some hard structure (bone) of the patient's body. The hand or instrument does not move over the skin, but remains in firm contact with it, carrying it along as it advances.

3. *Tapotement* is percussion of the tissues by slapping, pounding or beating, for which the operator's hand or a suitable instrument may be employed.

Vibration, consisting, as it does, of the administration of rapidly repeated blows of more or less severity, is a subvariety of tapotement.

Contraindications to Massage

Massage should never be administered where the skin is inflamed, broken or sore; over atheromatous blood-vessels; in painful and inflammatory states of the deep tissues; in cancer or abscess, because of the possibility of stimulating absorption and encouraging metastasis; in pregnancy; in short, wherever the benefits of manipulation would be more than offset by the local or systemic injury done.

The ability to administer massage properly is gained, first, through understanding of the principles and theory involved, and, second, by the acquirement, through practice, of great manual dexterity. *Practice* is the essential element.

The tyro should begin by taking lessons of an accomplished masseur, who should demonstrate the various methods to him. I say accomplished masseur, for he is a rare phenomenon. Of all those who pretend to have successful experience, there are few really efficient scientific operators. Like some other recent therapeutic methods, massage, legitimate and valuable as it is in various directions, has many alleged practitioners who are mere charlatans, knowing but little of the principles of the system, devoid of the necessary manual dexterity, exploiting their pretensions for mercenary gain.

Gynecological massage, the form elaborated and introduced by Thure Brandt, a Swede, for the treatment of certain gynecological conditions, is worthy of careful study. Applied to strengthen the muscular supports of the uterus, bladder, and rectum, in cases of uterine displacements, prolapsus, cystocele, and rectocele, and to break up adhesions and promote the absorption of exudation, the part to be treated is fixed by introducing the index- and the middle fingers of one hand into the vagina, while the other hand manipulates the area through the abdominal wall. According to Brandt, the contraindications are, the presence of pus and cancer. Some surgeons, whose panacea is the knife, and a number of unskilled operators who have given this form of massage without avail, object to its employment as unsatisfactory. Probably the failures are due more to bungling methods than to the principle itself, for that is certainly good. Theoretical knowledge must be backed by practice, by technical education of the fingers and hands.

Vibration

Vibration, as already explained, is but a mode of massage, consisting of a number of strokes following one another in rapid succession and setting up a tremor in a part of the patient's body that should be more or less intense. Formerly this was accomplished by means of the operator's hand or finger, some masseurs having acquired a skill in this direction that was little short of marvelous; but, since the invention of the mechanical device known as the vibrator, this has almost wholly taken the place of the hands, for the purpose.

The vibrator performs the act of vibration so much more perfectly and conveniently than do the hands and fingers, that it has become well known and stands in no need of introduction here. Its use is, without doubt, more popular than that of any other mechano-

therapeutic mode of application, while vibration in one form or another is given for almost every ill to which the human organism is subject, by operators ranging in skill and purpose from the scientific philanthropist down to the shampooing and massaging corner barber.

This widespread employment of vibration has, naturally, involved a large amount of amateurish empiricism, which has injured the cause in many directions—a result still further increased by the attempts of various manufacturing firms to exploit vibration as a complete system of medical practice, the object being, by aid of a flood of pseudo-scientific literature, to dispose of large quantities of vibrators at enormous prices. While this systematizing of vibration as a cureall, suggested by the success of Osteopaths more than by any other thing, is being attempted, the instrument is taking the place of the Osteopath's hands and fingers.

It is an established fact that the vibrator, if properly constructed and applied, is a valuable factor in therapy, and there are many good instruments on the market, the best of them, probably, being operated by an electric motor. Before one undertakes to employ it, he should have a correct conception of its function, physiologically and therapeutically.

What is vibration? Taken in association with the instrument that produces it, vibration, properly speaking, is a succession of strokes following one after the other with considerable rapidity. These strokes may be long or short, forceful or light, while their character determines the depth of the vibratory impulse upon the tissues. In response to them, every molecule within the sphere of their action trembles more or less, the degree depending on their relative distances from the area of impact. This is vibration. When applied to the living organism, its effects are as follows:

What Effects are produced by Vibration?

As I have stated before, the most simple and elementary form of stimulus is contact. Any organic substance capable of being stimulated will respond to mere contact with any object, whence we have ciliary motion, ameboid movement, and so on. The firmer the contact, the more powerful the stimulation. If pressure, firm contact, be sudden and short, we call it a blow or stroke; a very rapid succession of these we call vibration. Thus then, vibration constitutes, primarily, a stimulus, in the sense in which I applied the

term to massage. It increases both quantitatively and qualitatively the local circulation, tones up the coats of the arteries, and, by raising the arterial pressure and thus improving the nutrition of the part, it stimulates excretion and absorption of waste products and corrects metabolism, while the pulse becomes fuller and slower.

Why vibration is indicated in passive congestion, especially when there is pain, torticollis, chronic rheumatism, lumbago, neuralgia, etc., can easily be seen. It brings about disintegration and absorption of low-grade forms of tissue (obesity) and stimulates the heart, if applied directly to the precordial region; it stimulates, by increasing its tone, the activity of the muscular structure (constipation). Its local physiological effect corresponds accurately to that of massage; for which reason the term "vibratory massage" is proper and adequate. Manual massage forms an effective therapeutic combination with vibration.

Varieties of Vibration

The osteopathic idea of influencing the different parts of the body through the central nervous system (spinal cord) and the employment of vibration as a kind of local massage have caused a division of vibration into two classes, namely, peripheral (local) and central.

Peripheral, or local vibration consists in the application of the vibrator directly to an aching part—as, in a case of lumbago, to the muscles of the back; to the muscles of the neck for torticollis; in the rectum, for constipation; or along the course of a painful sciatic nerve. It resembles a local application of massage, and whatever claim can truthfully be made for the local action of the latter, is also true, in a measure, of vibration. The primary effect is produced upon the peripheral nerves, the vasomotors, and there seems to be no doubt that the local phenomena follow in due physiological sequence.

There are four considerations of importance in the application, namely: (1) the angle at which the vibratory force explodes against the surface; (2) the degree of energy brought to bear; (3) the frequency of the stroke; and (4) the amount of pressure.

The *measure of activity*, that is, the stimulating effect exerted upon the deep tissues, as a rule, is in direct proportion to the relative intensity or depth of the stroke together with the relative diameter of the surface treated. The lateral stroke stimulates the skin and its

component parts, and the greatest action is produced by a downward stroke, at right angles with the surface.

It cannot be denied that these points are of considerable clinical worth, but the technical aspects of vibration have been loaded down with a mass of minute details far out of proportion to their actual value; this, owing to the combined efforts of monomaniacal enthusiasts and the mercenary manufacturers of instruments—the former lacking knowledge and the latter knowledge as well as conscience. Vibration is not and can not be a special complete system. It is a therapeutic method, merely, although a good one.

Central vibration consists in the stimulation of the spinal nerve-centers, through which great therapeutic benefit is supposed to be produced in the regions which these centers control.

The exact execution of the vibration is determined by the effect to be attained. If to contact—the simplest form of stimulation—there is added pressure, the stimulating effect is augmented; and continued pressure finally tires out a nerve, which results in its sedation. Should pressure be continued beyond the sedative point, the activity of the nerve would be suspended and inhibition of nerve-function occur. Vibration being a form of interrupted pressure, it may be logically assumed that it can produce effects analogous to those of continued pressure.

The *effects of central vibration* may be classified as follows: (1) mild stimulation, from very short strokes; (2) powerful stimulation, from deep strokes; (3) suspension of nerve activity (overstimulation), from long-continued deep strokes.

The idea of acting upon pathological conditions through the central (sympathetic) nervous system is, theoretically, in perfect accord with the pathological view which regards all diseased conditions as results of (1) overnutrition, (2) undernutrition, or (3) perverted nutrition. As nutrition is practically synonymous with blood circulation, the idea of controlling local nutrition is resolved into the idea of controlling the circulation in an affected region.

We are as yet only at the beginning of the meaning and extent of the possibilities of central stimulation, and the subject is well worth our careful study and elaboration. Here, I can give only those general phases that are justified by our present knowledge of neurophysiology and our actual experience with central vibration.

In a general way, the anatomical location of the several central areas is indicated by the following vibration-table:

		Cervical vertebrae		Dorsal vertebrae	
Circulation (face, head, brain)	1 to 6	1 to 6	3 to 12	Stomach	3 to 12
Circulation (general)	1 to 6	1 to 6	4 to 5	Relaxation of pylorus	4 to 5
Eye	1 to 3	1 to 3	9 to 12	Liver	9 to 12
Heart (muscular tone)	1 to 5	1 to 5	8 to 9	Pancreas	8 to 9
Ear	6 to 7	6 to 7	8 to 11	Spleen	8 to 11
Heart (rhythm)	2 to 4	2 to 4	1 to 10	Intestines (small)	1 to 10
Organs of voice (larynx, etc.)	1 to 3	1 to 3	9 to 11	Peristalsis	9 to 11
Mechanism of respiration	3 to 5	3 to 5	7 to 8	Chill-centers (connected with thermic ganglia)	7 to 8
Thermic centers	2 to 5	2 to 5	6 to 12	Kidneys	6 to 12
Glands (lower jaw)	2 to 3	2 to 3	11 to 12	Diaphragm (through phrenic fibers of solar plexus)	11 to 12
Diaphragm	3 to 5	3 to 5	5 to 12	Lymph circulation (through the splanchnic)	5 to 12
Plexus (cervical)	2 to 4	2 to 4	2 to 12	Lower extremities	2 to 12
Plexus (brachial)	5 to 7	5 to 7			
			Lumbar vertebrae		
			1 to 4	Intestines (large)	1 to 4
			1 to 2	Mechanism of micturition	1 to 2
			2	Sexual desire	2
			1 to 5	Sexual mechanism	1 to 5
			1 to 3	Kidneys	1 to 3
			2 to 5	Menstrual function	2 to 5
				(Also 8 to 10, dorsal vertebrae)	

Vaccine- and Serum-Therapy in Everyday Practice

VI. Infections of the Skin and Subcutaneous Tissues

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from June issue, page 512.]

Carbuncle

AS REGARDS the direct etiological agent responsible for carbuncle, the staphylococcus aureus seems invariably to be the cause. However, this condition occurs so notoriously often as a complication of diabetes mellitus that in all cases of carbuncle the urine should be carefully examined, to see whether or not glycosuria is the underlying predisposing factor. If this is found to be the case, appropriate measures, principally dietetic, must, of course, be instituted.

An interesting sidelight is thrown on the subjects of diabetes and carbuncle by the reports of Shivdas (*Jour. Vac. Ther.*, vol. i, No. 4, p. 100), Miller (*ibid.* vol. i, No. 5, p. 157), and MacWatters ("Proc. Roy. Soc. Med.," vol. iii, No. 9, suppl., p. 178) on the results achieved by them in the treatment of diabetes by the use of autogenous staphylococcus-aureus bacterins prepared from diabetic carbuncle or ulcer. They employed doses of from 100 millions to 500 millions, usually at an average interval of one week, with a most gratifying reduction in the glycosuria. In 8 out of the 13 cases reported by these observers, the sugar disappeared completely from the urine and in 2 others it was reduced to a mere trace.

Considering the anatomic location and relations of the pancreas and its duct, it would seem reasonable and logical to combine

the bacillus coli with the staphylococcus aureus in diabetic cases.

As regards the medicinal treatment of the nondiabetic cases of carbuncle, calcium sulphide and the triple arsenates are indicated. Free incision and applications of compresses saturated with Wright's citrate solution are necessary surgical measures and should be resorted to early. If there is known to be an undue tendency to coagulation of the blood, as shown by observation of a drop freshly drawn, then citric acid should be administered internally, as heretofore detailed.

General hygienic treatment should be employed, so as in every way to elevate the systemic tonus.

Carcinoma

As to the etiology of carcinoma, we have nothing to say. Consequently, we have no specific bacterin or serum-treatment to offer for this lethal condition. However, bacterial invasion frequently does occur, as a secondary pathologic process, in carcinomata which have broken down and undergone ulceration or sloughing. Then a bacterin prepared from the same variety of bacteria as that concerned in the infection will, undoubtedly, be of value in checking suppuration and sloughing and in getting rid, to quite an extent, of the fearful odor of decaying tissue.

Doyen described the "micrococcus neoformans," which, while it is not claimed to

be the specific cause of cancer, is, nevertheless, found quite constantly in malignant newgrowths. A bacterin prepared from this variety of microorganism (apparently a staphylococcus) has, in the hands of a number of competent observers, seemingly definitely and beneficially influenced pain and tenderness, amount of infiltration, and the cachectic symptoms; however, the patient must be given plainly to understand that in the great majority of cases the bacterin will have no influence whatever upon the ultimate outcome of the disease.

Many "cancer-serums" have been devised, but, up to this time, none has proved to be of any value.

Cellulitis

Cellulitis constitutes a secondary manifestation of a primary focus of infection located elsewhere in the body; if the cellulitis occur on one of the extremities, the primary focus will be found somewhere distal to the more obvious secondary seat of trouble. Quite often the primary focus is very difficult to locate, as the solution of continuity constituting the portal of infection may be exceedingly minute or may have healed over on the outside, while the bacteria may be actively multiplying in the deeper tissues. These infections of the subcutaneous cellular tissues travel along the lymph-channels; the infection thus traveling from the periphery of the body toward the more centrally located structures. When the infection reaches a lymph-node, or a collection of the latter, as in the groin or axilla, the progress of the infection is either temporarily or permanently halted. If the virulence of the invading microorganisms is great or the resistance of the immunizing mechanism at a low ebb, or both, this arrest of the infection may be brief, after which the invasion proceeds with great rapidity until another chain of lymph-nodes intervenes between the invaders and their ultimate goal, the blood stream.

The logical procedure, then, is, to locate the primary focus, if this be possible, open the same freely, drain thoroughly, swab it out well with full-strength tincture of iodine, and apply a compress kept wet with Wright's citrate solution. Ofttimes, too, it is advisable to scarify or make multiple incisions into the inflamed area and apply the dressing just described, for reasons heretofore explained at length.

Again, in many cases, it is advisable to make incisions at the upper and lower boundaries of the infected area and connect them

by subcutaneous "through - and - through" drains. A case in point is that of a boy I saw in consultation with another physician, some years ago, before I had begun the use of the bacterins.

This boy had cut his knee, just over the patella, with a hatchet, and because this was a bright, new, and keen one, the wound had been regarded by his mother as "clean" who, therefore, merely applied a "clean" cloth and bandage. In the course of a few days, the wound had apparently healed and no trouble was apprehended, when suddenly the boy had a chill, then headache set in, and his temperature began to climb; in short, the boy had all the symptoms of a beginning severe infection, together with constitutional symptoms. A physician was called, who advised "a little aconite for the fever" and gave no heed to the underlying condition. The boy grew steadily worse and an area of cellulitis developed, just above the knee, on the anterior aspect of the thigh. The doctor thought he detected a "soft spot" above and external to the knee joint and cut into this spot, but found no pus, only a dirty grayish serum exuding from the cut surface. Becoming alarmed, he called for counsel, and I was summoned.

When I arrived at the farmhouse, the attending physician thought he had located another "soft spot" a little higher up than the first one and wanted to cut into it, requesting me to administer an anesthetic. This I was almost afraid to do, as the boy's condition was now desperate; for the cellulitis now extended above the groin, onto the abdomen, and so much septic absorption had taken place that the heart action was very rapid and feeble. Under light anesthesia, the doctor cut into the "soft spot," but with the same result as before. Cover-glass spreads of the lymph which exuded from this new wound, made at the time, and examined by me afterward, showed a pure culture of the streptococcus. Finding no pus in this second incised area, the doctor "gave up," and, taking charge of the anesthesia, told me to do whatever I thought best.

I remembered what the professor of surgery at my alma mater had told us to do in such a case, namely, to "make lots of holes and put in lots of drains." So, I made three pairs of incisions into the subcutaneous tissues, three cuts along the upper border of the infected area, and three at the lower border. With a long uterine dressing forceps, pushed from the lower incision along under the skin and emerging from the upper incision, several

strands of silkworm gut were drawn through each of the three drainage tracts, and then a wet dressing was applied. Now the original wound was opened freely, when the same dirty grayish serum again was encountered. This wound was mopped out with gauze and then thoroughly swabbed with full-strength tincture of iodine. The boy then was given calcium sulphide to saturation, and strychnine as a supportive measure.

Here was a really desperate case, yet, the boy recovered speedily. And bacterin-therapy, had there been any such thing at that time, would doubtless have hastened his recovery still more. Had I known about and had at hand a stock streptostaphylobacterin at that time, I should have injected it a short distance below the infected area, into healthy tissue, so that the newly formed antibodies would have passed along, in the direction of the lymph stream, right to the "seat of war."

Erysipelas a Typical Form of Cellulitis

Erysipelas is the most typical form of cellulitis, being caused by a special form of streptococcus, hence, will be discussed separately.

Most of the cases of cellulitis I have seen were due to the streptococcus; however, other germs, notably the staphylococcus, pneumococcus, bacillus coli, and the bacillus pyocyaneus, may at times give rise to this condition.

I am sure that by means of bacterin-therapy I have "aborted" many incipient cases of cellulitis of the female breast; in other cases, where suppuration had already occurred and incision and drainage had to be resorted to, bacterin treatment materially shortened the drainage period and hastened recovery, besides materially lessening the amount of glandular tissue destroyed. In the incipient cases, resort must naturally be had to massage and the use of the breast-pump. A prophylactic measure of value is the sponging of the nipples, after each nursing, with pure alcohol; the latter having an antiseptic and "toughening" influence upon the nipples, tending to prevent their becoming macerated and cracked, while it has the further virtue of evaporating completely, leaving nothing for the baby to ingest at the next nursing.

In all cases of cellulitis in general, a close watch for collections of pus must be maintained, and, when such a collection is discovered, it must be opened and drained.

In cellulitis owing to the streptococcus,

just as in other conditions caused by this organism, there is prone to be present an extensive hemolysis. Then some form of iron should be administered, for its hematinic effect. In such cases, the hypodermic administration of the citrate or of the cacodylate of iron is indicated and is probably the surest way of obtaining quick results. Strychnine is also needed, for its supportive effect.

In pelvic cellulitis, vaginal tampons saturated with boroglyceride, ichthyol, and tincture of iodine are of value when used in conjunction with sterile saline douches. The "Murphy drip" is of untold worth in this condition. When a pelvic abscess forms, drain it through the vagina, opening through the "pouch of Douglas," using a Kelly artery-forceps or the Mayo scissors to work your way through the posterior cul-de-sac. An ice-bag placed over the lower abdomen and pelvis has many advocates, and I believe it to be a measure of value. Bacterins, in this condition, should be injected into the inner aspect of the thigh, for reasons heretofore explained.

Cellulitis being an acute condition, the initial dose of bacterin should be relatively small, say, for the streptococcus, 20 to 25 millions; of the pneumococcus, the same as the streptococcus; bacillus coli, 25 to 30 millions; staphylococcus, 50 to 100 millions. The intervals between doses will vary, from twenty-four hours, to two or three days; lengthening the interval, and increasing the dosage as the condition improves.

In these acute conditions, it is well to employ a combined stock bacterin of polyvalent strain, one that contains all the varieties of bacteria likely to be involved, rather than to wait for a bacteriological diagnosis before beginning treatment. In this way, much valuable time may, and will, be saved. Some such combination as the well-known Van Cott mixture should be employed, containing about the following combination of pathogenic bacteria: streptococcus, pneumococcus, staphylococcus aureus and albus, and bacillus coli. This will meet the requirements of the great majority of cases.

Eczema

As we come to the subject of the bacterin-therapy of eczema, I feel that I can speak "as one having authority"; for, along this line, as well as in pneumonia, puerperal sepsis and acute rheumatic polyarthrititis, I have had an unusually rich clinical experience. Just how many cases of eczema, in its various forms, I have treated since I began the use of

the bacterins some five and a half years ago I am not prepared to state, but the number has been large, and I can truthfully say that I have yet to be disappointed by bacterin-treatment in this usually intractable condition.

As I stated at the beginning of this series of papers, I have not, in the majority of cases, depended upon biological therapy alone, but have employed it in conjunction with other indicated remedies. And this has been especially true in the case of eczema. Whether or not bacterial infection is the primary cause of eczema, is a debatable question; in all probability the answer is in the negative. But, certain it is that in practically all cases of eczema there is a lowered resistance against the pyogenic bacteria that normally inhabit the superficial layers of the skin and which cause no trouble until a solution of continuity of tissue occurs or until bodily resistance against infection is lowered by some pathologic process such as eczema. Then the bacterial invasion is most likely a secondary trouble; but, in a large percentage of cases of eczema, especially in the more chronic cases, the eczematous process will not yield to treatment until the pyogenic infection has been overcome by bacterin-treatment. In eczema, the staphylococcus albus and staphylococcus citreus occur more frequently as the infecting organisms than does the staphylococcus aureus. It will do no harm, however, to use a bacterin containing all three varieties, or even these three plus the streptococcus pyogenes; then you are nearly certain to hit the target.

The same rule as to dosage holds here as elsewhere, namely, use small doses in acute cases, and larger doses in chronic cases. In either case, gradually increase the dose until a favorable response is obtained.

In infants and children, if a rather large initial dose is administered, there sometimes will occur a temporary lighting-up of the chronic process into an acute one, with a copious exudation of serum from the affected area. This, however, subsides in a day or two and is usually followed by a very rapid and gratifying improvement in the clinical symptoms. This acute exacerbation occurred in my first case and greatly alarmed the parents, who called me in to see what I had done; but within two days or so I was receiving their thanks for the "miracle" the bacterin had wrought.

The dosage should be about as for staphylococcal infections, as heretofore detailed. After a cure has apparently been attained,

one should guard against a recurrence, by means of a monthly dose of bacterin, until convinced that the trouble cannot "come back."

In acute cases of eczema, I employ, as an external local application, zinc oxide ointment, which is very soothing to the raw surface. If there is much oozing of serum from the affected surface, corn-starch may well be added to the ointment. Where itching is a prominent symptom, as it usually is, phenol rarely fails to give relief; but it should rarely be used in amount exceeding 1-4 percent. Menthol, 1 percent, in zinc-oxide ointment, also acts well as a local anesthetic.

For subacute cases, balsam of Peru, 1-2 to 1 dram to the ounce of the ointment just named, is, in my opinion, the most valuable single remedy we possess. To this mixture, one may sometimes add, with benefit, salicylic acid, 10 to 20 grains to the ounce. In chronic cases, oil of Cade or liquid tar, about 10 percent, is indicated. Ammoniated mercury, 3 to 5 percent, is at times a useful, stimulating application. In fissured palmar eczema, salicylic acid, 20 to 30 grains to the ounce of zinc-oxide ointment, with balsam of Peru, 1 dram to the ounce, is very efficacious.

As to internal treatment, arsenic (Fowler's solution) is indicated in the *chronic, scaly, dry* forms of the disease; *never* in the *acute, weeping* eczemas. *This is an important rule*, but one which often is overlooked or disregarded.

In all cases of eczema, one should search carefully for some underlying gastrointestinal disease or disorder and correct it so far as possible. This is especially true in eczema occurring in infants. In "soreheaded" babies, fluid extract of Viola tricolor, administered internally in doses of 3 to 5 minims, three times a day, has been highly recommended by Strack, Piffard, and others.

As to dietetic and hygienic treatment, one must be careful to throw out all objectionable articles of diet, such as fat or greasy and fried foods, excessive sweets, and the like. A light, nutritious, easily digestible diet must be insisted upon, excluding condiments and coffee or other stimulants.

Water as a local application in eczema is almost always irritant and should be avoided as much as possible. To remove ointments and the like, pure olive-oil is to be used, rather than soap and water.

Keep the bowels active. A dose of calomel two or three times a week, will prove a highly useful adjunct to other forms of treatment.

(To be continued)

Is Syphilis Hereditary?

By E. KILBOURNE TULLIDGE, M. D., Middletown, Connecticut

State Hospital for the Insane

IF WE want to discuss syphilis as a hereditary disease, accepting McFarland's definition of disease as "the inharmonious relation of the individual to his environment," it is incumbent that we first form a clear, distinct understanding of what we mean by hereditary. For, in the true biological sense, this term is much misused in medicine and surgery, being applied to many prenatal conditions that have nothing to do with it.

In biology, the term "hereditary" is used to describe conditions transferred from parent to offspring by peculiarities of the germ-plasm. It does not refer to accidental conditions of prenatal life by which the health or perfection of the offspring is affected. These latter conditions are termed "congenital."

Many of the present-day biologists differ as to whether acquired characteristics can be transmitted to the offspring or not. If not, then there can be no such thing as a hereditary disease or deformity. Lamarck and Darwin believed firmly in inheritance and in the transmission of acquired characteristics; Darwin making it the basis of his theory of evolution.

The Nature of Heredity

Weissmann, Francis Galton, Adami, and perhaps the majority of the present-day biologists doubt or disbelieve its possibility. It seems certain that experimental characteristics, that is, mutilations, such as result from circumcision, amputation, nucleations, scoli-sectomy, and the like, are not transmitted; but it does appear certain that spontaneously acquired variations from the normal may be transmitted.

Adami has suggested that heredity may be explained upon the assumption that the idioplasm, or that part of the protoplasm possessing vital properties, is composed of a mass of molecules, which constitute a central ring, to which side rings may be attached or from which they may be detached without alterations of the central primitive ring. Environment causes the central ring to have attached certain side-chain combinations, and in this way the modifications of the tissue-cells are brought about. In the same way, environmental conditions lead to further modifications, in the form of new lateral-chain combinations. Those lateral chains that are last developed are the

least stable and the most readily lost, while those which have been attached for a long period of time are not readily loosened. Thus it is that conditions produced by the lateral chains that have been active for generations tend to persist, while those recent changes of structure or alterations of environment produce, with the general idioplasm, combinations too weak to be transmitted.

The hereditary conditions thus far considered refer to immediate peculiarities, as the possession by the parent of a peculiarly situated lock of white hair, which peculiarity is transmitted to the child; or the parent may have six fingers or toes, which also appear in the offspring.

In connection with certain diseases, hereditary conditions, however, are more remote. Thus, in hemophilia, or "bleeders'-disease," we find a certain mode of transmission: the male suffering from the conditions may not transmit it to his immediate offspring, though his daughters are very likely to transmit it to their sons—thus skipping a generation.

Consanguinity constitutes a dangerous element in heredity, because of its tendency to accentuate family weaknesses; this danger being in proportion to the deviations from normal of those concerned.

Atavism is another peculiarity in which the traits of remote ancestors may make their appearance, such as flat-foot, receding forehead, prognathism, that is, protrusion of the lower jaw, and also massive projecting ears—all characteristics of the lower animals and simian race.

Many pathologists divide the subject of heredity into two divisions; namely: true heredity, or the condition just discussed; and false, or apparent, heredity, commonly mistaken for heredity proper, and to which are ascribed those modifications of the embryo by conditions occurring in prenatal life. In this way, certain infectious diseases, such as smallpox and syphilis, may be transmitted from the mother to the fetus through the placental circulation and so cause the disease that has been acquired from the parent.

Those predispositions are tendencies which occur in the offsprings of tuberculous, cancerous, and neurasthenic subjects and may depend upon transmitted physiologic peculiarities, or

they may be nothing more than the result of lack of vigor of the germ-plasm, the development of which results in a feeble individual.

Do Spermatozoa Carry Disease-Germs?

The human ova are free, or almost free, from yolk and are relatively very small. There has not been a single observation, according to Adami, showing that the mammalian ovum is phagocytic, that is, able to take up foreign particles. That the minute spermatozoa should act as carriers, is still more unlikely; and the possibility that they do so has been negated by Gaertner.

Adami has shown that the minimum number of tubercle-bacilli that will set up peritoneal infection in the guinea-pig is eight; in the rabbit, it is twenty-four to thirty; and Gaertner, after obtaining the seminal ejaculations, found that they contained a sufficient number of the bacilli to cause the disease. Rohlff did not once succeed in rendering rabbits tuberculous by injecting them with semen of men suffering from phthisis. Gaertner concluded that the semen emitted by a phthisical patient does not, on the average, contain as many as ten bacilli.

From these experiments by Rohlff and Gaertner, Adami calculates that, on the average, human seminal ejaculations contain more than 226,000,000 spermatozoa, and that, if the semen contained, not ten, but one thousand, spirochetes, the chances that an individual spermatozoon fertilizing the ovum should bear with it a spirochete and so lead to germinal infection are as 1 is to 226,000. If 1,000,000, the ratio would be 1226—only 1 out of 85,000,000,000 spermatozoa having a chance of fertilizing an ovum. One may draw his own conclusions as to the chance of a spermatozoon conveying the disease from the father to the offspring. It is so absurdly minute as to be almost nil.

Syphilis Acquired During Fetal Existence

That cases of syphilis in the newborn are most often of late intrauterine acquirement, is made evident by Chiari, who states that in 90 percent of infants presenting signs of syphilis the liver is the seat of the greatest syphilitic disturbances. Infection through the placenta amply explains the conditions in infants; for, practically all the blood on its way to the placenta passes through the fetal liver, which thus is the organ first subjected to infection.

Adami specifically states that, whenever there are active and specific manifestations

of tuberculosis, syphilis or other infective diseases of the newborn child, the condition is of intrauterine acquirement, and not inherited. This statement he supports by referring to the various stages in which one may find the disease developed in the newborn.

After an interesting series of observations of experiments on healthy dogs, Friedmann concluded that bacilli introduced into the uterus, outside of the amnion, may some days later be found in the amniotic fluid. Whether through the placenta (from maternal infection), through the wall of the fetal sac, or by passage into the developing ovum before that sac has developed, organisms may infect the embryo, these various routes are adequate to explain the phenomena, without calling upon improbable infection of the ovum or spermatozoon prior to fertilization.

Children of syphilitic or tuberculous parentage who exhibit certain stigma—such as fetal cachexia, malnutrition, senile expression, senescence, even malformations—are those that have acquired these characteristics presumably through the germ-plasm which presents modifications and disturbances peculiar to the parental germ-cell.

The Role of the Placenta

After weighing the many arguments upon the passage of foreign substances through the placenta, as advanced by Bonnett, Hofbauer, Wallgren, Polano, Schmidlechner, Liebreich, and others who have experimentally proved the transmission of iron, fat, albumoses, toxins of diphtheria and tetanus, the organisms of pneumonia, relapsing fever, various infections due to pyogenic organisms and typhoid fever (which latter of the many mentioned is most frequently transmitted, due, no doubt, to its motility) it is apparent that the functions of the placenta are not limited to mere absorption by osmosis.

The reverse condition, namely, the transmission of materials from the fetus to the mother, has been demonstrated by Savoy and Gusserow. Therefore, we may safely say that it hardly seems probable that infection of the fetus may occur without some transmission of the organisms or their toxins to the mother, and the reverse.

The reason why the manifestations are not apparent at the time of delivery is due probably to a latent stage or period in which the spirochete develops a provisional immunity, only to be followed by manifestations of the disease in later life.

Keyes states, after citing "Colles' law," that the mother of such a syphilitic child (Colles' child), although herself remaining healthy during many years, almost invariably ultimately breaks out with tertiary syphilis (*choc en retour*), and that, therefore, the mother of a syphilitic child, even though she remain apparently sound, is in fact syphilitic.

In conclusion, let us suppose that, should a father transmit the disease apparently only to the fetus, by the fertilization of an ovum through a spermatozoon conveying a spirochete—and to which spermatozoon has been given its one 85,000,000,000th of a chance, according to Adami—and should this one spirochete be sufficient in itself to produce

the disease (which is highly improbable and unlikely), the infection would not be confined to the embryo, but would involve the placenta as well, and from there be transmitted to the mother. The condition would be a disease, not the result of peculiarities of the germ-plasm, but the result of an exogenous or mechanical infection, but which, we must admit, in the true biological sense is only a congenital condition.

The explanation for the erroneous use of the designation "hereditary" in connection with this disease, by the profession, is probably due to the fact that only of late has this term found its authoritative definition, as here employed.

Management of Summer Diarrheas in Infants

By CLIFFORD E. HENRY, PH. G., M. D., Minneapolis, Minnesota

JUST one word as to the examination of an infant, when one is consulted for an alleged attack of gastrointestinal trouble. Always be sure to have the child stripped of all clothing. Often the mother will not take the child's clothing off, and, so, the doctor may overlook the presence of scarlet-fever or some other acute infectious disease that starts with vomiting and a general gastrointestinal disturbance. If the child is naked, you can at the same time make an examination of the chest, in fact, a thorough examination of the entire body.

Furthermore, the urine should be examined. This fact I learned when another physician discovered in one of my patients a severe kidney lesion that I had overlooked. I had attributed the fever to a deranged stomach. A few doses of urotropin soon corrected the trouble. By a little care, a small sample of urine can be secured from even the youngest infant. Also, the last soiled diaper should always be asked for and carefully examined.

Castor-oil—the plain oldfashioned kind—is the best remedy to start the treatment of bowel troubles in children. Because of its properties of making a clean sweep and then to some extent checking the diarrhea, it has held its own. In this day of pampered humanity, when the youth of the land rebel against anything disagreeable, it speaks volumes for our old friend *Oleum ricini* to see it still in use.

Why do babies and young children have bowel trouble in the summer? In about ninety percent it is owing directly to carelessness or ignorance on the part of some elder. Overfeeding, or food intoxication, feeding of injudicious foods, irregular feeding, carelessness in preparation of the proper foods are the usual sources of the starting of the trouble.

There is absolutely no question but that these summer diarrheas are of toxic origin. No one specific microorganism is the essential cause. The improper feeding seems to bring about a condition that causes the common colon-bacillus to become virulent. The streptococcus enteritidis is frequently found as the infecting agent in cholera infantum. Other bacteria frequently present are, the bacillus pyocyaneus, the proteus vulgaris, and the proteolytic bacteria; also the peptonizing bacteria.

Summer diarrheas of infants may, then, be classed in two large groups, namely: (1) those owing to improper foods, and (2) those caused by some infection. In both groups, the toxemia resulting is the great danger.

About Overfeeding of Infants

Food poisoning resulting from overfeeding with proper foods seems to be the most difficult problem for the average mother to understand. She knows she is giving the baby the proper food, yet, a diarrhea develops; baby loses in weight and becomes

very sick. There are spells of vomiting when absolutely nothing can be retained, even at times bloody mucus being brought up. The stools are very offensive. The prostration sometimes is extreme, because of the great amount of toxins that have been absorbed from the intestines. The child seems to be most comfortable when resting, perfectly quiet, on its back.

In these cases, all food should be withdrawn for at least twelve hours, in some instances at least twenty-four hours. If the child cannot take water by mouth, then water should be furnished the system per rectum, either by the Murphy slow-drop method or in the form of small retained enemas. Feeding should be resumed very cautiously.

As for medication, the sulphocarbolate of sodium clearly is indicated. If the child will retain castor-oil, that should be given early. Sometimes the 1-10- or 1-20-grain dose of calomel will do better; the minute doses of calomel seemingly having a sedative influence upon the irritable stomach.

Harm of Irregular and Injudicious Feeding

Irregular feeding has the same effect upon the infant as have irregular meals upon an adult. It will derange the stomach, and indigestion results.

Some mothers think that every time a baby cries it must be fed. Then the result is indigestion which causes attacks of constipation or diarrhea and exposes the system to bacterial invasion or because of which the bacilli present become virulent.

If the child is on the bottle, the mother often will scald the milk by pouring it over the hot edge of the vessel in which it has been warmed. This scalding of the milk is a frequent cause of obstinate constipation. Also, the change in the food of the cow often will so alter her milk as to cause gastrointestinal derangement in the infant.

The habit of giving the baby a taste of all the foods on the table may be classed as injudicious feeding. When properly prepared, peas, spinach, and such green vegetables are, indeed, to be recommended and prescribed for older infants.

As in a case of food poisoning, the treatment should start with the withdrawal of all food and a thorough cleanup of the alimentary tract. The sulphocarbulates are indicated in these cases. Copper arsenite is one of my frequently used drugs. Dissolve 1-1000 grain (granule form) for each year or fraction of a year in 24 teaspoonfuls of water and of this

prescribe a teaspoonful to be given every hour. Ipecac or emetine hydrochloride in minute doses has a very beneficial action, if the vomiting is persistent and there is considerable mucus in the stools.

The Bulgarian bacillus, either in tablet or bouillon form, often is just the remedy needed to change the intestinal flora from a virulent to a friendly type, and the galactenzyne tablet has proven, in my hands, to be the most satisfactory. If the stools are very acid, the galactenzyne tablets should be combined with the sulphocarbolate of sodium. The stools soon will change to yellow, showing that the Bulgarian bacillus has overcome the virulent type of microbes present.

The Intestinal Infections

For the second group of summer diarrheas, cholera infantum may be taken as presenting the typical picture.

This affection often has its origin in a mild diarrhea of the preceding group, the bacilli in the intestine either becoming virulent or some virulent, pathogenic type being introduced.

Here, the intoxication is profound and there is great prostration. The toxins generated by the bacteria cause erosions and thus open ways to invasion of the lymph-channels and blood-vessels. In one case in my practice, in which a postmortem was made, the intestine was so full of erosions that there was not more than one-half of the tissue in normal condition, while in several places there were minute pinpoint perforations. This was absolutely not a case of typhoid fever, as proved by a Widal test, which was negative.

These cases are more frequent during July and August. The extreme heat of this period lowers the body's resistance, while the milk is more liable to decompose.

In these cases of infectious bowel diseases, there is, as a rule, considerable vomiting, consequently water should at first be given rectally. Water starvation is one of the things that must be guarded against. The inability to retain water in the stomach and the frequent watery stools greatly deplete the system.

Washing out the colon with physiologic salt-solution, then, after a few moments, injecting a small amount of thin starch-water, has a very soothing effect. The prostration must be overcome by stimulation and hot baths. Brandy in water should not, as a rule, be given (as often is done), since it is likely to irritate an already irritable stomach. Strychnine or camphorated oil is preferable.

Copper arsenite is an excellent drug. Also, the Galactenzyme Bulgarian-bacillus tablets should be given early and pushed to

full dosage. Upon resuming feeding, albumen-water and barley-water are much better than milk.

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

[Continued from page 509, June issue.]

THE active principles are in such extensive use in the United States and the literature is so elaborate that I deem it superfluous to go deeply into this interesting subject; for, I have, in the past, expatiated freely on the employment of aconitine, which is a fair beacon-light to the possibilities most of the other substances may lend, modified by their peculiar indications, very few others being so positive in their legitimate uses, though few others are endowed with possibilities of the heroic service aconitine renders.

Snatching Out of the Jaws of Death With Glonoin

Since glonoin came to my assistance, this wonderful substance has superseded all other heart sustainers in cases of perilous emergencies, for instance collapse and extreme debility under the critical influence of powerful depressants, such as aconitine and anti-febrin, the action being quicker and more dependable, ample to resuscitate the moribund, and hold the body in warm and pliant suppleness till the heart stops; thus depriving death of its agonizing horrors, the end coming like a babe falling into healthful sleep. I often have such reaction from rigid cold limbs and distressing agony, having had three recoveries of patients above whom the wail over the dead had resounded but whose vital tissue had not suffered any shade of lesion. Consciousness and the faculties of speech and eating and drinking frequently return to those who die, when the support of the heart can no longer yield the dominating sway over the feebleness of failing nature, the magic substance previously having forced the heart to break up the cumulating congestion and pump blood into the stagnate branches of the arterial ramifications, thus slowly reanimating and warming the circumjacent structures.

This was a surprising revelation to me, that came about by having been called at two o'clock in the morning to see a patient whom

another doctor had been attending for twenty-three days; the trouble being fever that had never yielded, and the urgent call advising me that from midnight on the patient had grown rapidly worse. When I entered the room I recognized that I was in the presence of death, the patient's limbs being cold and the death-rattle reverberating among the rafters of the house. I saw that the death-struggle would be long and frightful. My first impulse was, to leave at once; but suddenly I changed my mind and determined to find the limit of possibility of my glonoin in the last extremity, never having thought of its employment in such case.

At 2:30 a. m. I began giving double dosage of glonoin every fifteen minutes, repeated six times; then regular-limit doses every half hour. Gradually the agony abated. At 5 a. m. there was pulse; at 7 a. m. the girl was sitting up in bed, the body all warm, joking with her young friends, who had been weeping over her when I came. It was a sad suspense for me, the patient, the family and the friends thinking she was saved, when I knew that the heart must stop at any moment. Yet, I continued the half-hour doses right along till midnight.

The girl said she felt no pain; but several times during the day and the night she screamed, "Maria Santissima." When asked, why, she said, because she felt like it.

Soon after midnight she told me she was hungry and demanded to know what she might eat. I told her there was nothing ready but corn-starch gruel, and this she demanded. She was seated on the bed, grasped the spoon and swallowed three spoonfuls, then said that was enough, that she would now sleep awhile. I had my finger on her pulse: it struck a regular stroke. Her head no more than struck the pillow when the pulse stopped. The mayor of the town was at the side of the bed with me. I told him she was dead. He declared it impossible, but quickly convinced himself.

This was an extreme case, save for the three that recovered. And I have had a

number of other cases, but never one so intensely extraordinary for long-sustained vitality. Sometimes the family does not wish any interruption of the natural course of dissolution; and, again, I have been called even by one old European physician, for the express purpose of modifying the agony of death.

We do not positively know where to draw the line of demarcation between consciousness and apathy in the death-act. I have studied the problem profoundly, on the battlefield, in hospitals, and in the countless death-scenes I have witnessed in these tropical shambles of human slaughter; and I believe that consciousness lingers much longer than popular imagination gives credence. I have no positive supporting evidence that such is true, more than what those have told me who were long in states of collapse, as well as some who were prepared for burial and revived without any artificial intervention. They realized most things that passed, or imagined they had.

I do not regard any such testimony conclusive. Some time since there was expectation of a battle here in the night, under circumstances that would have ranged my house in the line of fire. I was advised to leave home for the night. But I went to bed as usual, not sleepy; and heard the firing commence as prophesied, the balls steadily pattering against my house and crashing through the planks. I thought it safer to keep still in bed.

Suddenly all was quiet. I waited a long time, hearing no shot nor sound made by troops. I arose and made a light. There was not the scratch of a ball anywhere about the house; and the garrison was quietly in quarters. I had slept unconsciously and thus awoke, after having dreamed of the firing too realistically to believe it a dream, when awake out of bed.

There must be some mystic affinity between such sleep and the act of dying. It were a pleasing certainty to know that absolute unconsciousness reigns supreme in the lugubrious ordeal of death; if not, those slow, long drawn dissolutions that drag along for a week or more must be too dreadful for imagination to hint at the sombre phantom of their terror.

I have seen a number of persons resuscitated who were taken from the water, apparently dead from drowning, who told me that all the acts of life passed before them in vivid review, just as consciousness was

vanishing, probably a more realistic apparition than slowly dying in bed.

Professional Devotion

The three great mysteries, *birth, life, death*—the haunting *will-o'-the-wisp*, the *ignis fatuus*, of the medical mind—justify the drawing of some of their sable hues into the dark background of medical disquisition. What a pity that all that pertains to us—to our very lives—must be submerged in sombre shadows of suspense, distress, and mourning!

Sometimes the glorious tropical morning bursts around me, with its thousand brilliant flowers dancing in the young sunbeams, bespangled with limpid dewdrops glistening like diamonds, and the merry birds of every hue on the joyous wing, and then I exclaim, "O God! that nothing grievous may come here today!" And you, sordid brothers, who, perchance, may be drinking a health to the pestilence with the undertaker, you may not believe that I pine and yearn with longing fondness for a month, a week, a mere day without the shadow of suffering or wo falling athwart the threshold of my door.

I never make a visit nor receive visitors apart from the formality of professional relations. Invitations to feasts or dinners never come to me. I never eat out of my own house, save when I am watching a desperate patient in the crisis, away from home. I live alone in my big house, without even a servant, during the past fifteen months. My thoughts, my purposes, my energies all center in my profession. I do not believe that there lives or ever has lived another medical man as completely estranged from his kind, in family and social relations, as I have been for half a century.

My Friends and What They Mean To Me

However, I do possess, in my great self-abnegating professional martyrdom, maybe, that which brighter lights, men of higher clinical attainments and social felicity than I dare boast of, can neither claim nor acquire: I enjoy the volunteer friendship of some of the brightest scientific and medical minds in the United States and Europe, who write me letters—such letters!—that reconcile me to my solitary lot in unwearied constancy and lighten labors that else might be irksome. And why my renegade vagaries in the columns of medical journals should have attracted the attention of such lofty minds, have caused them to pause in their giddy soaring of research amid the immaculate purity of limpid ether, in order to greet me

in my humble home with cheering words of encomium, telling me not to turn back nor falter, now that the cream of my life is exhausted, is something I scarce can understand.

And, then the knowledge that those poor mothers whose little ones I have attended so many years, with no expectation of a farthing in compensation, with the same solicitous care as I did those of the rich, who pay liberally, are ever, in their daily prayers, supplicating health and long life for me, affords some compensation for what may seem personal sacrifices. For, although—as my friends are well aware—I do not have great confidence in the efficacy of prayers, the unmistakable gratitude of these mothers is something to be deeply appreciated; while the fact that I never deny their appeals to give to their stricken loved ones the best there is in me, may, in the end, gain me some slight measure of consideration with the Guardian Power of the universe.

And that last phrase strikes a vibrating chord in my soul. I scout and deny, of course, the superstitious beliefs entertained by the natives of this still backward land, who are positive that the elements are peopled with spirits that are flitting and roaming about in the night, some of these, at times, even deigning to converse with flesh and blood. For all that, I sometimes have had a feeling that the protecting shadow of a guardian-angel's wing was hovering over my lonely head in some great crisis of trial and danger that called for almost superhuman endurance. And in those moments my thoughts involuntarily have reverted to my twin sister, to Carrie, and to Corinne.

More About Glonoin, the Great Vitalizer

These are little grains of vitalizing sand in the wide waste of desolating woe—drops of holy water on the surface of the dreary gulf of sorrow and despair. Something too much of pain and distress is ever inseparable from medical destiny in vast fields of untamed nature and less than half-civilized people—such as are these peons and Indians.

Glonoin, as a therapeutic agent, constitutes for us the great vitalizing recourse in shock of major operations or shots or other violence, whenever prompt and energetic action is demanded; nothing else known to the profession being as quickly and powerfully effective. Down here, so frequently all depends on fleeting moments that slow-acting medicaments are inadequate; and, of course, the same urgency not seldom supervenes in

the most up to date operating-rooms anywhere in the world. I do not now refer to operative shock; for, shock-producing operations in my field are too rare to be taken into account. But, purely physical crisis is the weird phantom of the clinician. He arrives, to find an emergency with which he must cope successfully within a few minutes or else compose the limbs of the victim for the long and dreamless sleep. There is not time for scientific diagnosis or urinary tests. The angel of death is throttling the patient. A congestion must be broken in a trice, else there will be nothing further for the doctor to do. A fever must be reduced, otherwise the heart will stop under the stress of excessive temperature.

These are inexorable truths that cost new men many aches of head and heart and the humiliation of seeing crape on the doors of their patrons, but which the timely and judicious administration of glonoin might have averted. With these enfeebled denizens of the torrid zone, I naturally have more serious necessity for such forceful stimulation than would be required among the same number of patients in a more salubrious climate and among stronger people.

Many a time the patient would be dead ere a scientifically ethical diagnosis could be made. Then, the only alternative is, to attack the predominating peril—fever, heart wavering, dysentery, one or the other (sometimes a pair), and this consists in the active hostility contesting the situation. The menacing stronghold reduced, the combating of minor complications very rarely is a difficult accomplishment.

The foregoing sums the good and sufficient reason why education for practice among normal people in an average climate must be unschooled and the lessons that qualify one for this peculiarly trying practice be acquired; and the practice itself is the only school that teaches the needful lessons.

The Marvelous Emetine

Emetine is the relentless antagonist and eradicator of diarrhea and dysentery in this hot and unsparing climate. What ethical therapy terms amebic dysentery I have long, down here, classed as putrid dysentery, because of its purulent, gangrenous development and deadly tenacity. This malady assumes the aspect of a malignant epidemic march of death almost as unsparing, in some seasons, as Asiatic cholera itself, and many times is little less painful. Moreover, until recent times, it was almost as obscure in

nature as yellow-fever, while we were as much in the dark as to any reliable and specific medication.

Some years ago, I read a very interesting paper, by Dr. Robert C. Kenner, editor of *The Therapeutic Record*, about the treatment of dysentery, in which he mentioned various likely drugs the names of which I do not now recall; but, he wound up by advising to try ipecac should the others fail. This suggestion was not new to me, however. I could not employ this drug here, because of the idiosyncratic tendency of these people to vomit under the slightest provocation—one reason, by the way, why standard galenic preparations of ipecac attain little success. But, while thus perusing that article, I remembered having read, in a French journal only a few days before that the active principle of ipecac does not exhibit the intense emetic property of the crude drug, and that a full dose of the former might be ingested without producing vomiting, if taken dry by the patient while in a reclining position and remaining thus for an hour, without taking any liquid.

Then and there I got the key to the secret of curing putrid dysentery! And I began to practice this method at once. I gave 1 grain of the alkaloid*—equivalent to 15 grains of the crude ipecac—as an adult dose; and this, while moderately purgative in most cases, proved so positively curative that in many instances the one dose cured the patient, without any other treatment. That is to say, I would administer the dose of emetine and instruct the patient to come or send to the office the next day for more, then heard no more of them, but later was informed that they had been well the next day.

I was actively engaged in this practice of emetine-therapy for dysentery for some years ere Rogers announced the discovery that flew on the wings of the wind all over the earth, never supposing it anything novel to the profession; for, all the world knew the value of ipecac in that disease, that its employment was interdicted by its emetic property, but also that emetine (the impure principle then known) was relatively devoid of this emetic property of the parent root. Consequently, I naturally supposed that this active principle was being used by the profession at large in the same way that I was employing it, save, perhaps, by those refractory ones who would prefer seeing their patients die rather than save them through

the medium of the active principles. The truth is that outside of my own field I really gave the question no more than a passing thought. I did make some passing reference to this matter a few times in medical journals or other print, but no more specially than I might have mentioned any substances in daily use everywhere, as quite naturally I should have thought of emetine as an anti-dysenteric, had I given the subject serious consideration.

The Use of Emetine in Children

I have, more recently, abandoned the employment of emetine hypodermically in the treatment of children, giving to year-olds as low as 1-12 grain of emetoid in a little syrup or other sweet; and I am getting as good results as I got from the needle-way, while being much less troublesome and not so objectionable to mothers. There hardly ever occur any symptoms of nausea.

Sometimes, in rebellious chronic cases, I give as many as three doses in as many days. At the same time, I employ sulphocarbolate of zinc as a disinfectant, both by mouth and per rectum. I also order plenty of good strong lemonade to drink, and some lemon-juice in the clysters.

The undertaker now gets no jobs among my diarrhea- and dysentery-patients, and these diseases give me little concern, as they terminate in short order, whether in early or late treatment; however, the people do not now let them run long.

Calcium Sulphide in Zymotic Diseases

Calcium sulphide is another sterling substance, useful in many diseases, provided it is of standard quality. It should be stated here that the commercial article is worthless clinically.

The greatest service calcium sulphide has rendered me was in epidemics of black German measles and of smallpox, when it actually aborted the attacks at the very inception and proved in a high degree prophylactic for persons who had been exposed. While I was attending the people on the Santuario Rubber Plantation, and Dr. F. N. Maldonado, a friendly native practitioner, did so on neighboring plantations, we two together treated over 400 cases of German measles, without there being a single death, while "scientific" doctors, on other plantations in the same epidemic, who did not employ the calcium-sulphide medication, lost 10 percent of their measles-patients.

(To be continued)

*This was the impure mixture of Emetine and cephaeline, as originally produced, but now differentiated. Ed.

What Others are Doing

COAGULEN IN STOMATOLOGY

Rifa, of Innsbruck, reports (*Deut. Monatschr. f. Zahnhlk.*, 1915), having employed coagulen Kocher-Fonio in persistent bleeding following extraction of a tooth, a 10-percent solution being injected into the socket. He also places pledgets of cotton wet with the solution into the hollow, as a prophylactic measure.

SYNTHETIC CAMPHOR EQUAL TO THE NATURAL

During a period of more than two months, M. Levy and W. Wolff, at the Royal Charité at Muenchen, prescribed artificial camphor in the same way as the natural product (*Ther. d. Gegenw.*, 1915), and they found the action absolutely identical, even in dosage of as much as 3 Grams a day continued for three weeks. This work is one of the very few recorded of the actual clinical employment of this synthetic substance—something greatly to be desired.

AS TO THE PENETRATION OF SILVER NITRATE

Quite in opposition to the current view, two investigators—F. Schumacher and P. C. Unna—now maintain (*Derm. Woch.*, 1915, p. 13 and p. 20; cf. *Ther. Monatsh.*, 1915, p. 270) that solutions of silver nitrate penetrate no less deeply into living tissue than do those of the now fashionable organic silver-salts; and both authors explain their direct observations upon physical-chemical grounds.

It is not a fact, as at present taught, that merely a superficial layer of silver albuminate is produced upon the tissue, but, the invariable presence of sodium chloride in the serum gives rise also to the double salts of silver albuminate and sodium chloride, a compound readily soluble in the bodily fluids.

Consequently, the silver-ion of the nitrate penetrates, in the local treatment of gonorrhea, just as much into depth as do the

organic preparations. Moreover, in the formation of some of these double salts, nitric acid is liberated, and this plays no small part in the resulting action.

MECHANISM OF THE ACTION OF MUSCARINE

By means of newly devised experiments—on the basis of the electrical behavior of muscles in the presence or absence of the calcium-ion in the circulation—G. R. Mines, of Vambridge (*Jour. Pharm. and Exp. Ther.*, 1915), has added further, and conclusive, proof for the contention that muscarine does not exert its toxic action upon the termini of the vagus-nerve, but, rather, direct upon the musculature of the heart itself. This he did by excluding the calcium element from the nutritive fluid circulated through the system.

THE VIRUS OF SYPHILIS

After the discovery of salvarsan, a few years ago, the efficiency of this arsenical preparation, for the treatment of syphilis, was believed to rest in the fact that within twenty-four hours after the first injection of the remedy no spirochetæ pallidæ could be found in the syphilitic lesions. Despite this fact, though, it soon was discovered that it was necessary to repeat the injections of salvarsan several times and to prescribe mercury afterward, if the disease was to be eradicated.

This paradox led to doubts as to whether the spirochetes were the actual cause of syphilis, and J. E. R. McDonagh, of the London Lock Hospital (*Lancet*, 1916, I, p. 981), concluded that, instead of being the absolute cause of syphilis, this organism possibly might be only a phase of the life-cycle of a protozoon. His investigations, the results of which he briefly described in his Hunterian lecture delivered before the Royal College of Surgeons of England, led him to conclude that the organism of syphilis, which he calls the *Leukocytozoon syphilidis*, evidently is a coccidial protozoon.

The life-cycle of this protozoon begins with a spore or sporozoite, which invades connective tissue or endothelial cells. In these cells, the sporozoite increases in size and, by a process of budding, gives rise to several bodies that become differentiated into male and female elements. These escape from the cells.

In other cases, the sporozoite may increase in size and divide into two and again into four. These four masses, by a process of further subdivision, develop into a spore-cyst, which then gives rise to spores.

The spirochetes develop out of the male elements, which consist of three nuclear bodies; the latter increasing in size, within large mononuclear leukocytes, and developing into coils, from each of which several spirochetes may arise; these break loose and can then be recognized as true spirochetæ pallidæ.

If the author is correct in his conclusions, an explanation will be afforded for the frequent instances in which the destruction of the spirochetes within the syphilitic lesions is not sufficient to establish a cure. Undoubtedly much more research will be necessary before all problems of this widely prevalent disease are solved.

IS EMETINE A TOXIC DRUG?

In the April 22 number of *The Journal of the American Medical Association*, the editor utters a "note of warning" regarding the possible toxic effects of emetine; the writer finding his text in an article recently published, in *The Archives of Internal Medicine*, by Levy and Rowntree—both of Johns Hopkins University—who were led to make an investigation as to the supposed poisonous nature of various samples of emetine, because of the death of a patient treated in the medical clinic of the institution named for a coexistent syphilis and amebic dysentery, and who had been receiving the drug. For twenty days, he had received, daily, subcutaneous injections of 1-2 grains of emetine hydrochloride, or, 29 grains, all told. The development of bronchopneumonia and renal insufficiency resulted in his death thirty days after his receiving the first injection and ten days after the last one of these doses. Subsequently symptoms of poisoning occurred in a person under emetine-therapy for alveolar pyorrhea, but this patient, fortunately, recovered.

Following these two experiences, a careful examination of samples of emetinehydro-

chloride supplied by five leading pharmaceutical manufacturers was undertaken. The alkaloid was administered to animals, hypodermically, in increasing doses until toxic symptoms made their appearance, and the striking and surprising fact was elicited that, while the emetine supplied by four of these houses was found satisfactory, that of the fifth proved to be markedly toxic. The name of the manufacturer of the latter sample is not divulged.

The author of the article in question does not venture to assign any reason for this toxic character of that particular article. Whether the specimen supplied was, so far as ascertained, the pure alkaloid, whether it was contaminated with cephaline, or whether the deleterious effects resulted from the formation of decomposition-products, we still have to learn. The fact of importance to physicians, however, is, that there is on the market a brand of emetine possessing dangerous and hitherto unsuspected properties, and which it is important for them to endeavor to avoid.

There is one point in connection with this report upon which the author fails to lay sufficient emphasis, namely, the fact of the prolonged period during which the emetine was given in the fatal case. Vedder, Lyons, Ross, and others, all of whom prescribe emetine extensively, now generally advise against its prolonged continuous administration. As a rule, we are told that the alkaloid should be injected daily for not more than two weeks at most, and that within this or any shorter period the *total amount administered should not exceed 15 grains*. It will be observed that the Johns Hopkins patient who died received practically double this quantity. Really, one would think that the physicians in charge would have been on the lookout for untoward symptoms. The more so, since we are informed that "from the sixteenth day, signs of grave kidney mischief developed." Even Johns Hopkins, it seems, is not above error.

This, we believe, is the first fatality reported as resulting from emetine, although, as our readers are aware, it has been administered in thousands upon thousands of cases, under all sorts of conditions, by all sorts of men, and in all sorts of places and climates. Comparatively speaking, the alkaloid is a safe one, but, of course, the same as any other potent remedy, it must be prescribed with discretion and intelligence. Furthermore—and important—this experience points out the duty placed upon the

physician of drawing his supplies from a thoroughly reliable and tested source.

THE TREATMENT OF PNEUMONIA WITH MASSIVE DOSES OF QUININE

Dr. Solomon Solis-Cohen of Philadelphia is known to be a warm advocate of the use of quinine and urea hydrochloride, which he gives in massive doses in the treatment of pneumonia, with results which are certainly very satisfactory. His method is described with great care in *The New York Medical Journal*, June 3 and 10, 1916. Doctor Solis-Cohen objects to his therapy for this disease being called the "quinine treatment," since he uses other remedies to meet indications. Quinine, however, is the drug upon which he places most reliance, and he uses it because it is believed by him to be a chemical antidote or an "antitoxin" to the pneumonia poison. It is because the drug neutralizes the poison of the disease (or itself is neutralized by that poison) that it is possible, in his opinion, to give the enormous doses which he administers without the production of any toxic effect.

Doctor Solis-Cohen is a firm believer in "dose enough," and this rule requires, in his experience, in any given case of pneumonia anywhere between 10 grains and 250 grains, spread out over several days. In some cases a single dose is sufficient to insure recovery, but as a rule a number of doses are required, and these are administered at from three- to six-hour intervals. The first dose administered consists of 1 to 1 1/2 Grams (15 to 22 1/2 grains) of quinine and urea hydrochloride, given in 25 to 50 percent solution in hot water, which is injected deeply. This is usually followed by prompt decline in temperature with slowing of pulse and respiration. These injections are repeated in smaller doses (1-2 to 1 Gram) every third hour until the temperature falls to 102.2° F. In all, the number of injections throughout the whole case varies from one to ten, with an average, probably, of four or five, spread over from 24 to 48 hours. Patients are not disturbed for these injections when they are asleep. The general condition of the patient is also considered, and the quinine injections may be omitted if thought desirable, even when the temperature remains in the neighborhood of 103° F.

As already stated, the administration of the quinine and urea hydrochloride does not constitute in itself the complete, logical treatment of a case of pneumonia. There are

other remedies which Solis-Cohen believes of almost equal importance. He particularly mentions remedies designed to support the blood pressure, these being indicated because of the tendency toward falling blood pressure in pneumonia, especially under the influence of the quinine, which causes temporary pulse depression. Accordingly, he has adopted two rules regarding the use of pressor drugs in pneumonia:

1. Inject the pressor agent with the initial dose of quinine and urea hydrochloride.

2. Repeat the injection every third hour, whenever the systolic pressure curve falls five points below the numeral of the pulse curve.

The pressor agents recommended by Solis-Cohen are cocaine hydrochloride, pituitary, adrenalin, and camphor. He frequently gives these remedies in rotation, changing the frequency of administration according to the urgency of symptoms.

Another class of remedies which Solis-Cohen uses and recommends highly and which are believed to be of an antitoxic character, are digitalis and veratrum viride. Quite apart from the action of these two drugs on the heart, he believes that each of them possesses distinctly antitoxic properties, and that, therefore, their use is justified in large doses, and this is especially true of digitalis. The physician may select his own preparation according to preference, and digitalin and veratrine are referred to as among the possibilities.

This does not cover the complete treatment of the disease. Other factors must be considered, such as elimination, the use of bacterins, correction of alimentary disturbances, the toilet of the upper respiratory tract, and the use of iodine and of the chlorides, which are believed to have peculiar values in the treatment of pneumonia.

This article must be read in its entirety to appreciate its full value, and we trust that it may be reproduced in permanent form. While the method of treatment advocated by Doctor Solis-Cohen is not entirely in accord with our own, and while he has less faith than we in the value of the decongestant alkaloids, the whole paper is rich with promise and will be found exceedingly useful to anyone who may read it.

INFLUENCE OF BOLDUS UPON PANCREATIC SECRETION

C. Fedeli, of the Pathologic Institute at Pisa, has been investigating the physiologic

properties of boldo and has found as follows (*Arch. d. Farm. Sper.*; cf. *Ther. Monatsh.*, 1915, p. 410), the experimental animal being a dog with an artificial pancreas-fistula:

The administration of fluid extract of boldo as a rule caused a generous flow of pancreatic secretion. While this action might be attributable to an increased secretion of gastric hydrochloric acid, by the same dose, the author inclines to assume also a direct pancreatic stimulation, analogous to the simultaneous cholagog action of the same drug.

Here is a hint for the use of boldine. It should be of decided value in intestinal indigestion,

ON THE ACTION OF HYDROGEN DIOXIDE IN ANAEROBIC WOUND INFECTION

Hydrogen dioxide is being employed to some extent for the disinfection of gasphlegmons and wounds infected with the tetanus-bacillus, and this determined K. Spiro to study the action of this agent upon anaerobic microbes in general. The result of his experiments as well as of speculation is the conclusion (*Muench. Med. Woch.*, 1915, p. 497) that any beneficial influence derived can not depend upon the direct destruction of the pathogenic germs, inasmuch as the concentration of irrigation-fluid necessarily is altogether too low to do so. Neither can the action be a purely chemical one upon any catalase involved, for such is absent in the case of anaerobes.

As a matter of fact, hydrogen-dioxide solution applied to wounds thus infected acts in a purely physical, mechanical way, in that the frothing produced causes the decomposed tissue debris and adhering bacteria to be ejected from the hidden depths and thus to be brought into contact with the atmospheric oxygen bathing the surface, or with any of the disinfectant agents possibly applied in dressing the wound.

IMPROVEMENT IN THE GRUBER-WIDAL TEST

When the pressure, from the military, of making diagnostic test for typhoid-fever, paratyphoid-fever, and dysentery grew enormously in Doctor Levy's bacteriologic institute for lower Alsace, the work of executing the Widal test often extended late into the evenings; and this evening work began to prove, not only time-robbing, but very tiresome to the eyes, with respect to the reading

of the result. Consequently, the laboratist, Anna Perlmann, cast about for some improvement in the method, and conceived the idea that the addition of some coloring might aid. So, she experimented with eosin, fluorescein, aniline-blue, and methyl-orange, adding of a solution of one of these dyes (enough to impart a distinct color) before she got ready to read off the result on the impregnated tubules, either after centrifuging or, when using the incubator, soon after removal from the latter.

The author eventually decided in favor of methyl-orange-solution, of the strength of 1-2 percent in alcohol—the same as employed in Toepfer's reagent for gastric acidity. Of this, 2 or 3 small drops from a capillary pipette with rubber bulb suffice for the purpose.

This method the author has thereafter employed in hundreds of operations, with unvarying satisfaction. While the eyes soon tire after glancing at the opalescent ("weisse milchige") contents of the tubules, this is not so in the case of those that have been colored orange, while the distinction between position and negative is more precise.

ointment FOR BARBERS' ITCH

According to A. Salinger (*Muench. Med. Woch.*, 1915, p. 649), the following unguent has given better satisfaction than tincture of iodine for eradicating barbers' itch (herpes tonsurans), especially when of the deeply penetrative form:

Salicylic acid.....	Gm. 8
Betanaphthol.....	Gm. 5
Resorcin.....	Gm. 4
Lanolin, to make.....	Gm. 100

EXOPHTHALMIC GOITER: QUININE AND UREA INJECTION TREATMENT

One of the many interesting things observed at the last meeting of the American Medical Association in Detroit was a series of photographs displayed by Dr. Leigh F. Watson, in the scientific exhibit, showing "before and after" pictures of a number of persons who have been treated for hyperthyroidism (commonly known as exophthalmic goiter) with injections of a quinine and urea hydrochloride solution. The results obtained were certainly marvelous, and the photographic evidence shown by Doctor Watson was most convincing as to that fact.

The readers of CLINICAL MEDICINE are, of

course, familiar with the Forchheimer treatment of exophthalmic goiter, with 5-grain doses of quinine hydrobromide taken internally three or four times daily. That this treatment is effective we know; but just how it acts and why it is effective, we are not prepared to state.

Doctor Watson, on the other hand, has a very plausible hypothesis. He injects the quinine and urea hydrochloride in 30 to 50 percent solution directly into the thyroid gland. By these injections he destroys the overfunctioning thyroid-gland tissue.

It is not claimed that the size of the gland will necessarily be greatly reduced by these injections, although as a matter of fact, the inflammatory reaction following is often sufficient to cause virtual disappearance of the tumor. In the photographs shown at Detroit, the writer noted that in most instances the gland was very much diminished in size—so much so as to be hardly noticeable.

Doctor Watson has been employing this treatment for two years and has had experience with a very considerable number of cases. In a paper published in *The Journal of the American Medical Association*, September 25, 1915, he reported experience with 50 cases, but, if I remember the Doctor's statement correctly, in Detroit he stated that he now had in the neighborhood of 100 to his credit.

The method of treatment is of greatest value in comparatively early cases, and it is not advised in the advanced toxic ones when the vascular and nervous systems have been permanently damaged.

The following points, according to Watson, must be kept in mind: "Much depends on a proper selection of cases; the necessity of preventing pain from any injection, by the use of local anesthesia, is of vital importance; if acute attacks of hyperthyroidism are to be prevented, the use of preliminary injections into the most prominent portion of the goiter, of a few minims of sterile salt solution given at one- to three-day intervals, followed by injections of sterile water, will be found indispensable; the result of the quinine and urea injection depends on the amount of tissue destroyed."

When properly given, the quinine and urea injection is almost painless. There is no post-injection discomfort, and the improvement is really very remarkable. The exophthalmos becomes less marked and finally disappears; the pulse becomes slower, and the nervousness and other characteristic

symptoms gradually disappear. In short, clinically these patients are completely cured.

Doctor Watson believes that these patients should be treated in hospitals, by men skilled in this work, and yet he says that he has given over 200 injections, in his 50 cases, with no unpleasant effects. It seems quite possible for any skilful physician to use this method of treatment, provided he uses ordinary care.

Doctor Watson emphasizes the necessity of minimizing pain by the use of local anesthesia. In order to prevent an acute attack of hyperthyroidism (meaning by that accentuation of the cardiac and nervous symptoms) which might otherwise follow the slight pain of the first quinine and urea infiltration in very toxic cases, the doctor begins treatment by injecting a few minims of sterile salt solution in the most prominent portion of the goiter, repeating this injection three to four times at one- to three-day intervals. By this time the nervous reaction is so diminished that the quinine and urea can be infiltrated with very slight discomfort and no increase in symptoms. In making repeated injections, the same point is used; that is, the quinine and urea is injected in the same place in which the sterile salt water was introduced.

In administering the quinine and urea injections, the physician should aim to introduce the solution into different portions of the gland at succeeding injections, the purpose being to destroy the greatest amount of thyroid tissue with the smallest number of injections. Watson now uses from 1 to 4 Cc. of a 30- to 50-percent solution of the quinine and urea hydrochloride at each treatment. These injections are repeated, as a rule, every third day, the intervals depending, however, on the progress of the patient. Eight to fifteen such injections are usually sufficient.

The syringe employed is an all-glass syringe of 1- to 2-Cc. capacity, with a fine platinum needle. The site of injection is first anesthetized with cocaine or novocaine, which is infiltrated into the skin, the subcutaneous tissues, and muscles, down to the gland. The syringe is now detached and the needle is thrust carefully into the body of the gland. After ascertaining that there is no fluid in the thyroid, and that no blood or air comes through, the needle is attached and the infiltration made slowly. Care must be taken, of course, to avoid the great vessels of the trachea; also, in cystic goiter, the fluid may be aspirated before the injections are made.

Best results are obtained by keeping the patient in bed for several weeks, while giving the injections.

SUBSTITUTES FOR OLIVE-OIL FOR ENEMAS

While presenting nothing especially new, still, the following little item may not be amiss, as it may prove suggestive under certain unusual circumstances. The idea was inspired by the well-known present scarcity of every kind of fat in the Central empires, and is merely that a Dr. H. Strauss reminds others (*Deut. Med. Woch.*, 1915) that in place of the customary olive-oil for rectal injection one may quite as well utilize oil of sesame, of poppy-seed, of cotton-seed, and of rape-seed, or also liquid paraffin. He further suggests that ordinarily 50 or 100 Cc. of oil will answer, instead of the usual 200 Cc.

FILTERING-PAPER AS A SUBSTITUTE FOR ABSORBENT COTTON

Speaking of makeshifts, for reason of economy or necessity, the following may be recorded: It has been found by Doctor Verth (*Muench. Med. Woch.*, 1915) that filtering-paper, as also the grayish Chinese paper, may take the place of absorbent cotton as a bibulous dressing for wounds; the paper to be crushed and wrapped in a layer of gauze. Such a wad does not serve well, though, for daubing a wound.

INTRAVENOUS ADMINISTRATION OF SODIUM IODIDE

Sodium iodide, in 10-percent solution, may be administered intravenously in excessive dosage with impunity, according to F. Klemperer, of Berlin (*Ther. d. Gegenw.* 1915), who has injected doses of 5, 10, 20, and (experimentally) even of as high as 50 Grams (from 90 grains up to 13 drams) two or three times a week, or even, in some urgent cases, three 20-Gram doses three times daily for a limited period. In not a single instance did the author observe any serious disturbances or side-effects; in fact, some patients seemed to bear the remedy better intravenously than when taken by stomach.

Doctor Klemperer has been employing this method more especially in internal lues, particularly where the aorta was affected, combining it (Gm. 5 to 10 per day) from the first, though, with a mercurial or salvarsan.

In such a course, he instills the sodium-iodide solution, then introduces a few cubic-centimeters of physiologic salt-solution, and then follows with the salvarsan; all three in immediate succession.

The relative harmlessness of this therapy, it is thought, may be accounted for by the fact that the iodine-ion will, of course, be eliminated renally more rapidly; on the other hand, it has been pointed out, that under those circumstances the full therapeutic value of the iodine cannot well be developed. Still, as to this latter point, the exclusion of the digestive apparatus, as also the massive attack, may constitute desirable features.

THE ALLEN DIETIC TREATMENT OF DIABETES

So much attention is being given in the medical journals to the Allen "starvation" treatment of diabetes, so called, that we reproduce herewith, from the March 23 number of *The Boston Medical and Surgical Journal*, the diabetic diet now employed, as presented by Joslin, Brigham, and Hornor, together with their analysis of the Allen method of treatment. We quote the summary of treatment, and the tabular exhibit of a "strict dietary," as follows:

Fasting. Fast until sugar-free. Drink water freely and tea, coffee and clear meat broth as desired. In very severe, long standing and complicated cases, without otherwise changing habits or diet, omit fat, after two days omit protein and halve carbohydrate daily to 10 Grams, then fast.

Carbohydrate Tolerance. When the 24-hour urine is sugar-free, add 150 Grams of 5 percent vegetables and continue to add 5 Grams carbohydrates daily up to 20, and then 5 Grams every other day, passing successively upward through the 5, 10, and 15 percent vegetables, 5 and 10 percent fruits, potato and oatmeal to bread, unless sugar appears or the tolerance reaches 3 Grams carbohydrate per kilogram body-weight.

Protein Tolerance. When the urine has been sugar-free for two days, add 20 Grams protein (3 eggs) and thereafter 15 Grams protein daily in the form of meat until the patient is receiving 1 Gram protein per kilogram body-weight, or if the carbohydrate tolerance is zero, only $\frac{1}{4}$ Gram per kilogram body-weight.

Fat Tolerance. While testing the protein tolerance, a small quantity of fat is included in the eggs and meat given. Add no more fat until the protein reaches 1 Gram per

kilogram (unless the protein tolerance is below this figure) but then add 25 Grams daily until the patient ceases to lose weight or receives not over 40 calories per kilogram body-weight.

Reappearance of Sugar. The return of sugar demands fasting for 24 hours or until sugar-free. The diet is then increased twice as rapidly as before, but the carbohydrate should not exceed half the former tolerance until the urine has been sugar-free for two weeks, and it should not then be increased more than 5 Grams per week.

Weekly Fast Days. Whenever the tolerance is less than 20 Grams carbohydrate, fasting should be practiced one day in seven; when the tolerance is between 20 and 50 Grams carbohydrate, upon the weekly fast day 5 percent vegetables and one-half the usual quantity of protein and fat are allowed; when the tolerance is between 50 and 100 Grams carbohydrate, the 10 and 15 percent vegetables are added as well. If the tolerance is more than 100 Grams carbohydrate, upon weekly fast days the carbohydrate should be halved.

STRICT DIET

MEATS, FISH, BROTHS, GELATIN, EGGS, BUTTER, OLIVE OIL, COFFEE, TEA, AND CRACKED COCOA

FOODS ARRANGED APPROXIMATELY ACCORDING TO PERCENTAGE OF CARBOHYDRATES

	5 percent*	10 percent	15 percent	20 percent
VEGETABLES (fresh or canned).....	Lettuce Cucumbers Spinach Asparagus Rhubarb Endive Marrow Sorrel Sauerkraut Beet greens Dandelion greens Swiss chard Celery Tomatoes	Brussels sprouts Water cress Sea kale Okra Cauliflower Egg plant Cabbage Radishes Leeks String beans Broccoli	Pumpkin Turnip Kohl-rabi Squash Beets Carrots Onions Mushrooms	Green peas Artichokes Parsnips Canned Lima beans Potatoes Shell beans Baked beans Green corn Boiled rice Boiled macaroni
FRUITS	Ripe olives (20-percent fat) Grape fruit	Lemons Oranges Cranberries Strawberries Blackberries Gooseberries Peaches Pineapple Watermelon	Apples Pears Apricots Blueberries Cherries Currants Raspberries Huckleberries	Plums Bananas Prunes
NUTS	Butternuts Pignolias	Brazil nuts Black walnuts Hickory Pecans Filberts	Almonds Walnuts (English) Beechnuts Pistachios Pine nuts	Peanuts 40 percent Chestnuts
MISCELLANEOUS	Unsweetened and unspiced pickle, clams, oysters, scallops, liver, fish roe	*Reckon available carbohydrates in vegetables of 5-percent group as 3 percent, of 10-percent group as 6 percent.		

(30 Grams 1 ounce) CONTAIN APPROXIMATELY		PROTEIN G.	FAT G.	CARBOHYDRATE G.	CALORIES
Oatmeal, dry weight.....	1	5	2	20	120
Meat (uncooked, lean).....	1	6	3	0	50
Meat (cooked, lean).....	1	6	3	0	75
Broth.....	1	0.7	5	0	3
Potato.....	1	1	0	6	25
Bacon.....	1	5	15	0	155
Cream, 40 percent.....	1	1	12	1	120
Cream, 20 percent.....	1	1	6	1	60
Milk.....	1	1	1	1.5	20
Bread.....	1	3	0	18	90
Butter.....	1	0	25	0	225
Egg (one).....	1	6	6	0	75
Brazil nuts.....	1	5	20	2	210
Orange or grape fruit (one).....	1	0	0	10	40
Vegetables, 5- and 10-percent group.....	1	0.5	0	1 or 2	6 or 10
Oysters, six.....	1	6	1	4	50

1 Gram protein..... 4 calories
1 Gram carbohydrate..... 4 calories
1 Gram fat..... 9 calories
1 Gram alcohol..... 7 calories
6.25 G. protein contain 1 G. nitrogen.

1 kilogram..... 2.2 pounds
30 Grams (G.) or cubic centimeters (Cc.) 1 ounce
A patient "at rest" requires 25 per kilog. body weight.

Miscellaneous Articles

The Narcotic-Drug Habit: Its Ambulatory Treatment

IN THE treatment of cases of drug-addiction¹ one of the principal factors to overcome is the lack of self-confidence. Many a patient will hesitate to submit to the treatment for the cure of this habit on this very account. Another thing which will cause the addicts to lose courage is the sanatorium-treatment, they generally being under the impression that they will have to endure untold suffering before being freed from this drug-habit. The time and the expense is also an important factor which is to be considered.

Doctor E. S. Bishop, in the *American Journal of Surgery* for December, 1915, says in part:

"The successful cure of a case of narcotic addiction is in itself a problem sufficiently important to deserve the undivided attention of the physician who is treating it. The reduction of a drug of addiction below the amount of the body's needs robs the addict of his most valuable asset in securing and maintaining recuperative powers. Therefore, the relief and cure of narcotic-drug-addiction is not a matter to be lightly undertaken. The physician or surgeon who has in his care a narcotic-drug-addict whom he is treating for another disease-condition should remember that the patient's recovery from the condition or disease for which he is being treated depends to a great extent upon the amount of functional balance and organic and metabolic adequacy which exists in that patient; and he should realize that functional balance and organic and metabolic adequacy in a narcotic addict are largely under the control of, and vary with, the extent to which that patient is kept in an adequate drug balance.

"The establishing and maintaining of an adequate drug balance, therefore, is one of the most important elements to be considered in the management of a case of narcotic addiction undergoing operation or treatment for a condition other than the cure of the addic-

tion. Success depends, therefore, more upon the nervous, functional, organic, and metabolic adequacy and the proper balance of the patient at the time of the withdrawal of the drug, than it does upon the special methods used for the accomplishment of the withdrawal or the amount of the drug which is daily needed to supply the body's demand. It is practically as hard to withdraw a narcotic drug from an addict whose requirement is 1-2 grain a day as it is from one whose need is 5 or 20 grains a day. One patient can be cured of his addiction in a shorter time, while another will require much longer."

In the treatment of these cases, the ambulatory method as here outlined has appealed to many an addict, who would have hesitated to undergo sanatorium treatment.

In order to make this method of treatment a success, it is necessary to obtain the full confidence of your patient and also to impress upon the addict that there will be no suffering, either mentally or physically, with the assurance that there will be a perfect cure, without the necessity of going to a hospital; and, with his honest cooperation, this will encourage the drug-habitué to make a trial at it.

He must be impressed to follow directions closely and honestly. His medicines must be taken with regularity, and the opiate must be reduced but very little every two or three days, perhaps 1-4 grain at a time. He must be cautioned not to reduce it too quickly—which, in his enthusiasm, he may do—as that will upset the physiological balance of the system. Usually the pride manifested at the successful reduction of the drug and the desire to succeed, when once it is undertaken, and the little suffering or inconvenience it entails will prompt the patient to leave it off too quickly. This then will disturb the adequate balance of the system, and disaster may result in its successful accomplishment. Therefore, it is safer to make haste slowly.

It may take a month or two, or even six months, but, if faithfully carried out, success will surely crown one's efforts.

The better to illustrate my observations and conclusions, one case will be cited as an example of this method of treatment.

Case 1. Woman, age 45, of good family history, with neurotic tendency, well preserved in mind and body. She had suffered severe sciatica when a young girl, which apparently resisted all methods of treatment. She was, therefore, given a tablet containing 1-4 of a grain of morphine sulphate and 1-150 of a grain of atropine sulphate. She found it necessary to take twelve tablets a day in order to obtain relief, and has been taking that amount daily for thirty years, although the cause for which these tablets have been taken has disappeared many years ago.

Owing to the federal antinarcotic law, she was unable to obtain the necessary tablets from her druggist. She was, therefore, referred to me for a prescription. I agreed to comply with her wishes, provided that she would follow my advice, so as to cure her of this drug habit. She expressed surprise at the possibility of being able to accomplish this and doubted her ability to undertake such a course of treatment at this time. On my assurance that she would feel no inconvenience, I finally gained her compliance and she fully assented to place herself under my care. She was informed that she need not make any changes in her daily routine of living, only that her diet must be plain and wholesome—no sweets, pies or pastry; liquors of all kind must be taboo, as well as the excessive use of tea or coffee. Also, that she must carefully and with regularity follow directions as regards the taking of her medicines.

As it is necessary to stimulate the liver and bowels, in order to overcome the stagnation which is caused by the drug, a pill of the following composition was prescribed:

Calomel.....	gr. 1-6
Podophyllin.....	gr. 1-6
Bilein.....	gr. 1-8
Strychnine arsenate.....	gr. 1-250

One to four such pills, as may be necessary, to be taken at bedtime, and to be followed in the morning by a dose of saline laxative. This to be repeated for three consecutive nights, so that the bowels would have operated freely. After this free purgation, the following antiaddiction tablets (Abbott's) were prescribed:

Xanthoxyloid.....	gr. 1
Atropine valerate.....	gr. 1-250

Cactoid.....	gr. 1-32
Strychnine valerate.....	gr. 1-128
Nuclein.....	m. 5

One such tablet to be taken every three hours, day and night, until dryness of the mouth be experienced, then only every four hours.

While taking these tablets, the drug must be gradually lessened every two or three days. This can, therefore, easily be accomplished without any hardship. When the patient begins to realize this, it will be an incentive to make speedier progress and leave off more than the system can stand and, therefore, disturb the adequate physiological balance. Disaster will result in consequence and the patient will be discouraged. This lady reduced her supply of tablets, from 12, to 1 1-2 a day, in thirty-two days, and, as she remarked, without noting the least discomfort.

However, in patients of a nervous temperament, there is that factor to contend with; so, the following will overcome extreme nervousness and sleeplessness:

Specific passiflora.....	oz. 1
Specific scutellaria.....	drs. 4
Glycerin.....	drs. 12
Chloroform water, enough to make	ozs. 4

Directions: Two teaspoonfuls in a wine-glassful of water every two or three hours, when nervous, restless or sleepless.

This lady hardly felt the necessity for this: yet, others could not sleep or be comfortable without it.

Owing to sickness in her family and a great deal of worry in consequence, this lady came to a standstill in the amount of her reduction. However, she did not lose courage, and by April 1, 1916, she was free from the drug. She certainly felt grateful, as shown by the receipt of the following letter:

"My dear Doctor Tuchler: I feel that I owe you a great debt of thanks for breaking me from the drug-habit. I had used morphine for thirty years. It was given me first for a combination of ills—sciatica, rheumatism, lumbago, and gout, from which I suffered tortures for years, and then for pains in my heart. My doctors told me I could not live without it. When I went to you on the 1st of December, 1915, you surprised me by telling me of your cure, which I gladly commenced at once and found it did all that you claimed for it. When I commenced your treatment, I was taking 4 grains of morphine a day. Now I take none, and I have never had one moment of inconvenience at the present time nor while taking your

treatment. I feel like a new woman and at least twenty years younger. Once more I thank you. Very gratefully yours, Mrs.—. San Francisco, Cal., April 12, 1916."

The following conclusions have been arrived at in treating cases of drug addiction by the ambulatory method:

1. The patient's confidence and cooperation must be fully gained by an assurance that no difficulty nor hardship need be undergone in order to obtain a successful result.

2. A slow and gradual reduction of the drug every two or three days—just a little each time—will not disturb the adequate physiological balance of the system when the above treatment is faithfully carried out.

San Francisco, Cal. A. S. TUCHLER.

[Doctor Tuchler's gratifying results prove that it is possible to treat these difficult cases of drug addiction successfully at home, provided several conditions are complied with. The physician must possess the enthusiasm and thorough knowledge of the subject, displayed by our correspondent. He must, as Doctor Tuchler insists, gain the absolute confidence of his patient; and, what is not always easy, the patient must bring to bear a not inconsiderable degree of will-power and persistency on his own part, in order to aid the physician in his management of the case. While undoubtedly there are many cases in which the ambulatory treatment advocated by Doctor Tuchler results in the lasting recovery of the patient, probably the majority will lack in one essential or another, and the method will fail for that reason.

As a general proposition it is our opinion that these patients do best under the regimen of sanatorium treatment with its careful supervision and with the close and constant contact between physician and patient. We believe that it is only in the intelligent and strong-willed patients that home treatment may be tried; or then in cases in which sanatorium treatment is either refused or is impossible. Whenever the patient can be persuaded to enter an institution peculiarly intended and prepared for the treatment of drug addiction, it is to his best interest that he should receive the advantages of institutional care.—Ed.]

HOW I TREAT NARCOTIC HABITUATION

The treatment for the drug-habit is one of the most fascinating experiences that I have encountered in medical practice. You have

to deal with a psychical as well as a physical abnormality. I employ the hyoscine-hydrobromide treatment. My method differs from the usual hospital practice in the manner of administration in relation to the frequency. I practice the gradual-withdrawal method, within a period of from five to ten days.

I give a combination of calomel, podophyllin, jalap, and rhubarb as a purgative the night before starting. The next morning I give a big dose of epsom salt. After thorough purgation, I give, in combination, 1-2 grain of morphine, 1-60 or 1-40 grain of strychnine, and 1-100 grain of hyoscine. Before the effect of these drugs has entirely disappeared, I administer hyoscine, 1-100 grain, and strychnine, 1-40 grain, say, at about noon. Then, at night, about 9 o'clock, I give 1-4 grain of morphine, 1-100 grain of hyoscine, and 1-60 grain of strychnine; that is to say, for the first day. The second day is largely a repetition of the first one.

Then I make my visits further and further apart. Never feed any solid foods during the first forty-eight hours; if you do, you will have on your hands one of the most obstinate cases of acute indigestion imaginable. Milk, lemonade, and broth seasoned with butter are all right, but it is even better not to let the patient have any kind of food for the first forty-eight hours.

So far as the suffering is concerned, that is more imaginary than real. However, if my patients are really restless, I do not withhold morphine, in small doses. The amount of the drug that the patient has been taking is not considered by me—the treatment always is the same.

A word about hyoscine. I read in my *materia medica*, and have always been so taught, that this alkaloid is a hypnotic, but my own experience with it is the opposite. Your first case may alarm you somewhat, when the patient is under the influence of hyoscine, but it is all right. Just watch the pulse. The pupils dilate to two and three times their usual size. The patient will pick at the bedclothes, hear noises, see things (such as bugs, spiders, etc.), talk incoherently; but all of that is the effect of the hyoscine.

In some hospitals and sanatoria, the patients are put under the influence of hyoscine for from forty-eight to seventy-two hours. I hold that that is a mistake; for, the patient is, in a manner, unconscious and when he wakes up or becomes conscious he does not remember very much what has happened. Therefore, when he is discharged, he goes right back to the habit. A man put in jail

will do the same thing—that is, go back to his crimes, if he has been in for six months.

You must, as in all other diseases, have the confidence of your patient. I have never seen any condition in which suggestive therapy acts so well. In hospital-treatment, the patient does not get that consoling, sympathetic, humane talk that he gets—or should get—in private practice. You can readily see the difference. I often compare the hospital-methods with the processes in a big mechanical shop. So, in an institution, each one does a certain kind of work. It comes mechanically and by routine; hence, there is not much sympathy shown, and, while the patient is physically free, mentally he still is a slave. Consequently, at the first despondency or debauch he readily takes up again the old habit.

All this is my own actual experience, without the aid of books or fellow assistants.

A. L. SAUNDERS.

Memphis, Tenn.

[Our feeling is expressed in the comment on the preceding article—that every narcotic habitué, when under treatment, should be under close supervision, preferably in an institution. Also, no treatment for these addictions is complete that does not include thorough eliminative measures—purgation, diuresis, and diaphoresis. And the doctor *must* watch the heart's action closely.—ED.]

MY TREATMENT OF INFANTILE DIARRHEA

When a child, in its second summer, has ten to twenty copious watery stools in twenty-four hours, griping pains, high fever, and so on, and these symptoms have continued for one to two days, I always begin with calomel with aromatics, 1-10 grain every half hour until six doses have been given. Two hours after the last dose of the calomel, I order castor-oil; although in older children I always prescribe a laxative saline.

To control the fever, I take 3 granules of aconitine (gr. 1-800) and 3 of digitalin (gr. 1-64), dissolve them in 24 teaspoonfuls of water, and give of this a teaspoonful every half hour, until the fever goes down. Then this medicine is omitted for a few doses or even for an entire day and night. If there is not much fever, I leave off the fever-medicine until after the castor-oil has operated.

For the diarrhea, I give either zinc sulphocarbolate or the "intestinal antiseptic," i. e., of the combined sulphocarbolates tablet. To

older children or if there is much pain, I sometimes give copper arsenite, 2 tablets, of 1-100 grain each, to 4 ounces of water; a teaspoonful of this being given every half hour. This will control the pain much better than does opium.

I am a user of the alkaloids and have been for twenty years. I have taken CLINICAL MEDICINE, originally THE ALKALOIDAL CLINIC, nearly ever since its first issue, and I confess that I could not practice medicine without the active principles. Incidentally, I enjoy reading Dr. C. S. Cope's articles very much, as well as all the rest.

T. R. NASON.

Columbus, O.

VARIOUS SUMMER TROUBLES

So far as my treatment of diarrhea is concerned, I may say, first of all, that there is so little of this class of troubles in western Washington that, really, I hardly know how I might treat the varieties that you, living in the eastern and southern sections, have to deal with.

I have been in this state, excepting for a year and a half in California, since 1889, and in all these years have not seen a dozen cases of simon-pure "summer complaint," such as I encountered in New Brunswick, Canada, and in California. I have been in this little town of Sultan for eleven years and have seen only one genuine case of "summer cholera," and that child was brought to me from eastern Washington; it died soon afterward, for it was moribund when it arrived in this place.

Acute indigestion is frequently encountered here, caused by overeating decaying green fruit and such things.

My treatment is very simple and most effective. In the case of large children, a hypodermic injection of 1-10 grain of apomorphine and an enema of epsom salt will clean out the alimentary canal in short order, after which I give hyoscyamus in any form, together with minute doses of ipecac every hour or less till the nausea is gone. Then the patient gets whey or barley-water in small quantities until he drops off into a good sleep. And in nearly every instance the second or third day will find the patient convalescent and ready for a diet proper under the circumstances. Then, if there is any catarrh of the stomach, I give some hydrastis in any form, so long as it is pure, and soon the cure will be complete.

There is nothing that I know of that will quell colicky pains so quickly and surely as hypodermic injections of apomorphine. I have tried this many times, and the measure never fails to relieve more or less.

For quickly cleaning out the stomach and bowels after a debauch, there is nothing so effectual as, first, 1-10 grain apomorphine given hypodermically, then a large enema of solution of epsom salt, 1-2 ounce to 1 pint, or 1 ounce to a quart, of water.

For congestions, I give small doses of calomel, ipecac, and sodium bicarbonate, and (also by mouth) epsom salt in 10-grain doses, every hour for six hours. Do not give any morphine after the apomorphine in these cases; hyoscyamus [or hyoscyamine] is better. If needed, sodium sulphocarbolate must be given after the bowels are empty. In any case, if the bowels are infected, give calcium sulphide freely; still, injections of epsom salt will work wonders.

If blood passes, give high injections of fluid extract of hamamelis and borax or, if severe hemorrhage comes on, give emetine hypodermically. I have controlled a chronic case of bleeding ulcers of the bowels persisting for nine months by means of 4 hypodermic injections of emetine hydrochloride. Three given in September, 1916, prevented bleeding entirely till May, 1916, when the bleeding started again, but one dose stopped it at once, and it has not bled again. This woman had bled almost every month for years (both before and after the climacteric), often for a week at a time, at any bowel movement. Nothing ever controlled it before. Her bowels are always loose, but now there is no blood and she feels much stronger.

I enjoy CLINICAL MEDICINE greatly. The June number is good. I have tried chionanthus in two cases of diabetes and both were benefited; one, in fact, seems cured.

Keep an eye on liquid petrolatum—it does not promote digestion or assimilation. I have tested it out in my own family and find that it probably clogs the lacteals and causes the food to pass the bowels.

My daughter, a high-school teacher, tried it for sluggish bowels and found it produced weakness and hunger, the flatus discolored her clothes very badly and gave her a disagreeable odor both of breath and perspiration. Consequently, I directed her to discontinue it. Soon she improved and the bowels remained better. *The Medical Council* has mentioned the clogging of the absorbents by the heavy oil, but the odor and discoloration of clothes are my own original observation,

and I give it to you as a pointer for future consideration.

THOMAS W. MUSGROVE.

Sultan, Wash.

[Doctor Musgrove has given us some valuable hints, and I am sure we shall all be grateful for more. The evidence as to the value of emetine in hemorrhage is convincing; and we know, from personal experience, what a useful drug apomorphine is for treating summer ailments.

Liquid petrolatum has its limitations, one of them being the tendency to "leak" with discoloration of the clothing. I believe this has been noted by everyone using it extensively. This difficulty can be overcome largely by using an emulsion of the oil which will mix intimately with the feces instead of insinuating itself around and by any scybalous masses. For this same reason, the emulsion is less likely to cause the delayed absorption sometimes complained of by those suffering from feeble digestion.—ED.]

BOWEL TROUBLES OF SUMMER YEARLINGS

Forty years ago, a mother with her yearling babe sprawls in bed on a hot summer's night, with every evidence of perfect health of both. The "wee sma" hours pass, and with them a life, crushed out by infantile cholera's steamroller. Pandemonium reigns. The doctor, hurriedly called, had ordered his pet prescription—a catechu and bismuth mixture—and finished the job with paregoric. It was about the best he could do then. This sketch is neither overdrawn nor confined to the treatment of children.

The misfit in that day, and in these days, was, and is, due to lack of, and disregard for, fixed instructions for the mothers as to how they should observe every bowel action for evidence of any radical change.

If the doctor's catechu, bismuth, and paregoric happened to delay the funeral forty-eight hours, the breast was given liberally to the child in order to quench its thirst, at the same time filling to overflowing the entire intestinal canal. The febrile state, present before the explosive outbreak, was started anew. The doctor's duty was, and is, to teach the mother a few simple laws of cause and effect, to tell her about the character of the dejecta at the beginning of an infant's existence. This applies today. Did the doctor himself know about this then, and does he know today?

Today, with our advanced therapeutics, this baby could be saved. How? Emetine instant. Supportives, such as dry heat, over all the body. Glonoin and atropine, each to effect—in a case like the one cited, hypodermically, in order to overcome the danger of collapse, and adding strychnine, then giving the emetine. When a reaction is established, give 1-10 grain of calomel, repeated at half-hourly intervals until 1 grain, all told, is given.

Repeated lavage of the bowels with saline solution must be practiced while pursuing this course of medication.

Should colicky pains give trouble during any period of the attack, control them with hyoscine hydrobromide.

The foregoing plan should overcome the trouble. And it will. The child will rally quickly, but will need careful supportive treatment, besides proper intestinal asepsis—and for this I know nothing superior to the sulphocarbolates.

In the mild cases, treatment is the same, except for omitting the "collapse drugs." In all cases of summer diarrhea, withhold the usual nourishment for from twenty-four to forty-eight hours.

Should colitis result as a sequence to any such case, then nothing succeeds like the bacillus bulgaricus, freely given, to establish friendly bacterial colonies in the colon. Only be careful not to overdo a good thing and get a lactic-acid excess. This method will seldom cause grief.

J. D. JUSTICE.

Hunter, Okla.

HOW TO GIVE INTRAVENOUS INJECTIONS

Fads and fashions come and go. They leave behind them data that in some future time are dug up and rejuvenated. At present (among other things), intravenous medications are the vogue. However, many physicians still shudder a bit at the idea of putting drugs directly into the blood.

In the treatment of malaria, I have been using, in this manner, quinine and hydrochloride, and, as compared with intramuscular injections, there is all the difference that can be imagined. First, the former are more potent; secondly, there is no sore; thirdly, no reaction occurs. The patient will tell you that he tastes the quinine in the mouth before you have completed the injection, and he may experience slight nausea for a few minutes.

All you require is, an all-glass syringe of not over 5-Cc., capacity; a good sharp needle; and some arrangement for sterilizing. For the latter purpose, I use a chafing-dish, put some water into it, and light the burner. I then tie a string around the syringe-plunger and needle. Then deposit them in the dish. I also put into the water a small cup. I boil the whole for ten minutes.

Now pour the cup full of boiling water, then allow to settle and cool for a short time. Remove the syringe with *sterile* hands and place the dose of soluble tablets that you desire to administer (usually 5 of 2 grains each) in it. Push the plunger down on them, then through the needle draw in enough water from the cup to make a perfect solution.

Bind off the selected vein to produce tension (usually the arm above the elbow). For this purpose, a good, clean handkerchief will do. Wrap the binder around the arm twice, then give it a double twist, so as to make it hold without tying a hard knot; or moisten it a little, when it won't slip. This is, to allow you to release the pressure easily, in order to let the blood start to flow after your needle has entered the vein. Next, with the stopper of the bottle, dab a little tincture of iodine on the skin at the point selected for the puncture. Now all is ready.

Make the puncture into the vein. You will know when the vein is entered by the return flow of blood into the syringe. For that reason, you do not want to use a needle that is too small. As quickly as you see the blood in the syringe, make pressure on the plunger, for the blood might clot in the needle. After you have expelled all the blood from the needle, take time to relax the pressure, by loosening the bandage, to allow the blood to flow, as said. This will make it much easier to expel the contents of the syringe into the vein, because there is considerable back pressure. All done! Now withdraw the needle quickly and place a finger over the puncture for one minute, then wipe the iodine off with a little alcohol.

All this will not give as much pain as does a hypodermic injection of morphine subcutaneously.

I use a B. & B. platinum needle, about one inch long and just a little larger than the regular hypodermic needle. I use the same needle for giving regular hypodermic injections as well.

I never have had an accident of any kind. All the complaint the patient will make is, that he will probably mention that he is tasting the medicine before you get it all into

the vein. I have used it at a temperature of 105 degrees, with the effect that the patient will have a profuse sweat inside of thirty minutes, and the fever will not return.

If any reader has under treatment a case of chronic chills that he cannot cure and which does not depend upon hookworm-disease, let him try this plan. It does not even make the ears "rattle."

T. H. STANDLEE.

Edgewood, Tex.

THE ANFRACTIOUS AUTOMOBILE AND ITS DRIVER

We, the readers of *THE CLINIC*, congratulate ourselves upon being able to peruse, among many other interesting articles, those by Doctor Benedict about the automobile. This fractious and festive vehicle has become such an important element in the workaday life of the doctor that it compels us to take it seriously. Any item of knowledge added to that we already have is a welcome addition, especially when one depends entirely upon the machine for transportation.

I fear that I am not in the doctor's class of novices, having now driven over a total distance of more than a hundred thousand miles. Some of those miles have been very long, some very short. The shortest ones have been those when I have taken my family for exploratory journeys over the far places in this wonderful country of ours. On these journeys, my son and I drive turnabout. We disagree with some of Doctor Benedict's preachments, but it is not of that that I wish to write. According to the various observations made by us on our journeys, far and near, we have formulated a book of rules. I am impressed with the idea that it is a good little book, even for the veteran driver. I will expound some of its important doctrines.

THE BOOK OF RULES

1. Meet to the right, pass to the left.
2. On every railroad a train is coming. It remains to be seen whether there is time to cross.
3. Always cross a railroad-track on the low gear, and never attempt to change gears while crossing.

Exception: Provided one can see for a long way in both directions and, if the ground is level, cross on the high gear, but make a slowdown.

Truism: A railroad crossing is never on level ground.

A blood-chilling escape in the fastnesses of the Cascades caused us to formulate the next rule, viz.:

4. Any old mossgrown track has trains on it.

5. At the bottom of every hill there is a bump.

6. At the end of every bridge and at every culvert there is a bump.

Exception: On one of our pilgrimages we visited the lovely and fertile valley of the Yakima, where an immense irrigation-project has literally caused the desert to blossom like the rose. Irrigation-ditches of large caliber usually follow the tops of ridges. Hence, this addition to the rule book:

7. In irrigated districts at the top of every ridge, there is a bridge.

8. On obscure curves, you, yourself, must avoid collisions. The other fellow will not.

9. If you "cut" obscure curves, your collision is only a matter of time.

10. *You* must take care of the pedestrian, for, he will not take care of himself.

11. You must see all of the road all of the time, and in towns you must see all of the street, including all of the sidewalk all the way back to the houses.

"See that abstracted individual standing quietly on the sidewalk? He is going to wake up quickly and walk right in front of your machine."

12. Every slow-moving vehicle has a child hanging to the back of it. You cannot see the child, but it is going to drop off and run in front of you too late!

Collisions with inanimate objects are usually easily accounted for. Certain animate objects, however, deserve special thought. Children are swift on their feet and absolutely irresponsible. In play, they are deaf to your horn and they do the most unusual and unaccountable things. Playing quietly by the roadside, they will run swiftly, without warning, in front of your machine. An accident has, thus far, not fallen to my lot, but I can imagine the horror of striking a human being with the heavy and swiftly moving car.

When a locomotive-engineer makes an application of the brakes for a slowdown, he calls it, in the vernacular of the railroad man, "pinchin' 'em down." We have adopted the vernacular in the formulation of rule 13, to wit:

13. When you see a child ahead, pinch 'er down.

Another animate object deserves special consideration; not because of swiftness of foot, but because of a most rudimentary

knowledge of the automobile. I refer to the cow. Her cerebration appears to be exceeded in deliberation only by her fixed determination to avoid sudden or coordinated physical exertion. We have made sundry endeavors to improve her education, but have, as a result, merely the marks of crumpled front fenders. A front fender judiciously planted in the flank of a cow does not hurt the cow, but it does crumple the fender. We have, therefore, set the words of rule 14 to the tune of an old drinking song, as follows:

When you see a cow, pinch 'er down,
O, when you see a cow, pinch 'er down,
When you see a cow, pinch 'er down, pinch 'er down,
Pinch 'er down, see a cow, pinch 'er down!

The next time opportunity offers, slip your car close to a cow and sound your claxon, and see whether you think it puts her teeth on edge.

J. H. BRISTOW.

Portland, Ore.

A WARNING AGAINST AN IMPOSTOR

The W. B. Saunders Company, of Philadelphia, has requested us to publish the following warning:

"We are advised that a very clever swindle is being worked by a young man calling on physicians in various sections of the country. He is fraudulently soliciting orders and collecting money for subscriptions for medical journals and for medical books published by various firms. He usually represents himself as a student working his way through college and trying to get a number of votes to help him win a certain contest. He sometimes uses the names of L. D. Grant, H. E. Peters, R. A. Douglas, and F. C. Schneider, and he usually gives a receipt bearing the heading of some society or association, such as The United Students' Aid Society, The Alumni Educational League, The American Association for Education, and so on.

"The description given of this swindler is as follows: A young man of the Jewish type, rather slender, with very dark hair combed straight back, and shows his teeth plainly when talking.

"The whole scheme is a fraud. The societies mentioned do not exist. The idea is, to collect money by offering special discounts and prices on medical books and journals, and then to skip with the money.

"This young man does not represent The W. B. Saunders Company, whose name he frequently uses. He is a fraudulent bus-

scription-agent, and physicians generally should be on the lookout for him."

[In this connection, we refer to an article on the same subject printed in the May CLINIC, on page 454. We should not be surprised if the man referred to by The W. B. Saunders Company is the same one of whom we know as I. D. Farr.—Ed.]

IT MUST BE TRUE

The best and finest doctor
In all the country 'round
Is that young Doctor Gizzard,
Who lives at Jerrytown.
It does beat all how many folks
He's snatched from grim death's door;
Since he's been there the folks don't fear
The fever anymore.
Some of his patients die, of course,
But you may be assured,
If they had done as Doc had said,
They leastways had died cured.
You take his dope a little while,
And you'll soon get your health.
How do I know this all is true?
Why, Doc said so, himself!

G. W. BURNER.

Johnstown, O.

MORE ABOUT THAT SWINDLING SOLICITOR

We have just received another communication from a physician in Madison, Illinois, who writes as follows:

"On May 26, I gave a check for \$5.00 to a man calling himself Geo. Walker, who purported to represent The General Supplies Company of Chicago. His plan was, to sell membership cards, and, by paying \$10.00 per year, you would become a member and be able to buy auto supplies at considerably less than the retail price. As I was to receive a catalog in a few days and not getting any, I wrote to The General Supplies Company, and I will give you their reply.

Dear Sir: Referring to your letter of the 5th instant, addressed to The General Supply Company, 34th and State Streets, Chicago, which letter, after search by the postoffice authorities for the above company at the address given has been turned over to us:

We hasten to advise you that Mr. George Walker does not represent us and, furthermore, that we do not do business on a so-called "membership-plan." We issue no catalog, but we do deal in automobile and bicycle supplies, together with the other line of goods shown on our letter-heads.

For your information, I will state that yours is the second letter of this kind that has been turned over to us concerning the actions of Mr. George Walker, the previous letter being received from Dr. O. A. Kell, Salem, Ill., under date of May 30.

We handle "Ford" supplies and can supply them to the consumer at a reduced figure; also tires, etc.
Respectfully,

R. M. TOMKINS.

"I believe that, if the doctors who read **CLINICAL MEDICINE** were informed about this, it would perhaps save them the fee and also be able to turn this man up."

[We doctors have always been more or less "easy marks" for confidence-fakers, and it is time that we show these gentry that we can keep our eyes open.—ED.]

POTATO-PARINGS FOR EXTERMINATING LICE

I read in your journal for March an article recommending oil of turpentine as an exterminator of lice. I modestly submit a remedy which I have used for years with unfailing success. It is equally fatal to any kind of lice, whether on animals or human beings.

Boil 1 quart of potato-parings in 3 pints of water, strain. Apply the cold liquid freely to the infested surface. It will kill all the vermin and put the nits out of commission.

ALICE M. THOMPSON.

Tooele, Utah.

BACTERIN-TREATMENT OF ECLAMPSIA

Lately I have used bacterin-therapy in puerperal eclampsia, with marked success. The baby was born at 12 midnight, and at 1 o'clock, just as I was leaving, I was called back and found the mother in convulsions. I gave veratrine hydrochloride, to slow the pulse, and repeated it in each attack, which came on every three hours. But, as they continued into the second day, I became alarmed and gave her a mixed bacterin of 100 million colon-bacillus and 50 million each of streptococcus, pneumococcus, and staphylococcus aureus, albus, and citreus. After the second injection, given twelve hours after the first, the convulsions ceased to appear. I do not know which did the work, but I presume the colon-bacillus was at the root of the evil.

This may be a hint worth trying, for at least it will do no harm.

N. W. D. COX.

Arlington, Mo.

ONE WAY OF TREATING DYSENTERY

Conforming to your request for a symposium on pellagra, dysentery, and summer

diarrheas, I venture to submit the following on dysentery, as just now I am in an epidemic or, rather, a pandemic of that disease, and will give my very successful present treatment while it is fresh in my mind.

I prescribe calomel, 1-10 grain; zinc sulphocarbolate, 1-4 to 1-2 grain; bismuth subnitrate, 1 to 2 1-2 grains; to be repeated every two or three hours, to clean out and aseptisize the bowels. I combat the fever and the hemorrhage with aconitine, magnesium phosphate, and Bulgarian bacilli, together with atropine, dosed according to age. I wash out the colon with enemas of physiologic salt solution or ordinary soap-suds, to cleanse, and introduce after this a suspension of the Bulgarian bacillus, about one-half to one teaspoonful at a time; it depending on the age as to the quantity used with the expectation of retention.

If the bowels are *very* active, I prepare a solution of argyrol, 1 dram to 1 ounce of water, and of this solution I add a half to one teaspoonful to a half to one teaspoonful of sterile water and throw this into the colon, with the expectation that it be retained.

I feed albumen and buttermilk to which the Bulgarian bacilli have been added. Breast-fed infants need no feeding save the mother's milk. As a matter of fact, I never lost a breast-fed patient, and I have had many such in the past ten years. I have three under treatment now and all are doing nicely, although they had stools of mucus and blood as close as only thirty minutes apart and temperatures ranging as high as 103° F.

This present epidemic takes on the form of cholera infantum and is much harder to handle than formerly; but, I am glad to say, the disease is yielding well to my treatment.

Do not forget the old slogan, "Clean out, clean up, and keep clean," and feed the pauper.

If anyone can help out, I shall be glad. This is just my way of doing it. Others have other ways and other means. The other only thing I should add to the treatment is copper arsenite if the stools are green.

A. L. NASON.

Mathiston, Miss.

CURRENT COMMENT BY A COUNTRY DOCTOR

Near-Eclampsia and Autoinfective Septicemia.—The patient, a primipara in the late twenties, one of those individuals in whom the struggle to maintain balance between anabolism and catabolism is maintained only

by a strenuous draft upon reserve force when physical strain is augmented above the usual. Her pregnancy was uneventful until the term was nearly completed, in fact, nature was responding to the new physiological impulse in a remarkable manner. Urine examinations were negative, until the last one was made, four days before confinement. Edema, slight during late pregnancy, suddenly became very pronounced and abundant albumin appeared in the urine.

A milk diet was immediately insisted upon. Elimination was pushed, with an initial course of calomel, podophyllin, and bilein, followed by laxative salines. Then I continued with irisoid and chionanthoid, an old hepatic trouble of hers being in mind, while there was a yellowish coating on her tongue. Arbutin and *muck water* were prescribed for the nephritic indications; the sulphocarbulates of lime and soda also were given, to meet evidences of intestinal autotoxemia.

No one, save the thoroughly efficient trained nurse, was aware of the imminent danger of eclampsia, since, at times, it is best to maintain a beneficial optimistic psychological atmosphere. However, both nurse and physician went into action well prepared for the possible eclamptic soul and body-harrowing of all concerned. The requisite treatment was all there; namely: veratrine, apomorphine, lobeline, pilocarpine, and elaterin; incidentally, blankets for a sweat aider were available and the hardware for a quick delivery was sterilized. But the delivery was without incident, save for being a "dry birth," and pituitrin was indicated late in the second-stage presentation, since the dilatation and diameters offered no contraindication, even in this primipara.

Everything went splendidly! Not so the lochia, which were scant and disappearing, the function of secretion being "on strike." That dreaded form of puerperal fever incident upon failure of the physiological process to care for the usually innocuous waste set in. The albuminuria continued. The gentle use of a *dull* curette for possible placental debris was followed by intrauterine pix-cresol irrigations. The main reliance, as always in like conditions, was a saturation with echinacoid alternated with calcium sulphide to the point of keeping the stools odorous therewith; a course of the Van Cott polyvalent vaccine being used as accessory treatment; while the asthenia was met with strychnine valerate, digitalis, and cactus, as indicated.

Even with cautious medication and restricted diet, dysentery, with mucous stools,

appeared on the sixth day as complication, and a circumscribed tenderness and some tympanites caused the figurative hirsuteness on the alopeciatic attendant's head to rise in fear of peritonitis. Opiates were temporarily resorted to and hot applications of a saturated solution of magnesium sulphate under oilsilk were made. Cholagog action was maintained with chionanthoid, and the bowels were cared for with the syringe and exhibition of liquid paraffin catharsis—excess peristalsis being thereby prevented. Strychnine valerate was continued during convalescence, with nuclein and iron to aid the reconstructive processes. She made a good recovery, and she had an unweaned baby, to go into the hot weather struggle for its biological existence.

After all, it does not do to be worried by statistics; most of 'em were compiled before Van Cott's prepared bugs were added to echinacea. Keep cool and push the indicated remedy to effect, never overlooking corollary symptoms that may necessitate modifications of treatment. Forget all about medical nihilists. Know what your drugs will do, and reinforce them with the suggestion of conscious power. Don't start out by protecting your reputation with a gloomy prognosis. Finally, get consultation, if you need it. One way you can do this is by turning to your files of the up to date medical journals and seeing what someone else in the same predicament did. You may get a valuable hint. Yes, and you may find that the other fellow did just what you are doing, and thus feel that you have the help of an unknown friend.

Is a law strictly up to modern thought which would prevent a physician from advising a mother who must reproduce at such terrible risk of leaving the one she has an orphan? This writer leaves it to Doctor Robinson and others. Pretty serious thing to have a woman take chances on puerperal fever and eclampsia again, even though once fortunately placed convenient to careful attention and in reach of plenty of Van Cott, echinacea, and nuclein. It would almost seem that she should be allowed some slight say in the matter before again going down into the valley and needing a hard medical fight, as well as that petition in the litany, which was written by someone whose knowledge of human need extended to the awful trial of a woman perpetuating her species, even when physically fit to do so.

Bad Management.—As it is esteemed praiseworthy to report one's errors of judg-

ment, mention is regretfully made of the following obstetrical fiasco, hopes being had that it may prevent like mistake in judgment by some other practitioner.

The summons came at 3 o'clock on a dark morning: "Dat der granny woman she say hit 'shuah cross ways an' I better get 'er doctah." Questioning brought out that this darkey woman had been in labor for twelve hours and that it was something ranging between simple inertia and a complicated twin presentation. The previous day's work had been hard and retirement late; also the OB emergency department was not in its usual readiness. Thus, a delayed start was made—hot coffee being also awaited, in probability of a hard trip, with nothing clean or appetizing at the distal end thereof. Autosuggestion of a tough and undesired deal added to the general delay, and it was a full hour before everything up to and including the forceps, chloroform, pituitrin, and H-M-C were ready. Then came another hindrance, owing to the horse having become imbued with the same spirit of loitering. Once started, excellent speed was made, but there had been too much loss of precious time. A mounted messenger with a nearly winded horse met us on the way.

"No need 'er coming, doctor, hit's too late."

"Molly dead?"

"No, sah, she aint daid. She fine and done foun' her heir."

Twenty dollars and mileage gone. Also the added glory of a quick and painless delivery at the cost of one H-M-C and an ampule of pituitrin. If Aunt Jezebel's hands were not beyond the mother's high-power infection resistance, no M. D. will have any part in that accouchement. It was a case fully protected as to payment, too.

Some of Aunt Jezebel's Obstetric Certainties.—It will be of interest to those who have been relying on macrotoid, caulophylloid, and perhaps a bit of H-M-C to relieve after-pains that all this is entirely needless. Just put the woman's husband's razor under the mattress two days before confinement and leave it there, and there will be none of this disagreeable aftermath to combat. What effect the razor of other than the husband's, if, as at times happens, he is not the source of the heir apparent, Auntie does not say. Perhaps the razor's failure would be proof of infidelity.

No use to use atropine or any other drug to terminate lactation. Just milk the woman onto a hot brick, and that will do the work.

Under no circumstance, allow a woman to eat fish, even if they be bright-eyed and red-

gilled in their freshness, for four weeks after confinement. It is one of the most deadly things that can be given during the puerperium.

Puerperal septicemia can only follow improper disposal of the afterbirth. Bury it properly, and all will be well. All this scrubbing is foolishness.

Refilling Prescriptions.—It would make it easier for the druggist who wishes to act correctly toward the physicians, and harder for the one who does not (perhaps he is influenced by the devil of economic determinism), if it were written upon all prescriptions that they were not to be refilled and no copy be given. The prescription is but a memorandum to the pharmacist of what to prepare for the patient *at that time and in his present condition, and for him only*. Incidentally, it is not for a neighbor or a second cousin, who might be injured by it. Why not have something to this effect on the prescription blank? Recently a man came to the writer, requesting that a refill be made of a copy of a prescription containing heavy dosage of sodium cacodylate. This had cured him of *rheumatism*; therefore, it would cure another for whom he desired it refilled. Perhaps the person upon whom the holder of the prescription was about to *practice medicine without a license* also needed sodium dimethylarsenate. However, that prescription was *not* refilled, neither was an extra copy made, as requested, to be given to the holder. The writer received a "ballout," and someone will, in all probability, accommodate the gentleman. But our skirts are clean.

That prescription should have been protected against its becoming, not a cureall, but a possible "harmall." Our prescriptions have always been protected with "Non rep. et non cop."; but, if we ever return to urban practice, it will state on the blanks in plain English just what the prescription is intended for: the patient himself at the present time. Don't blame the druggist, when the fundamental fault is at home. The large majority of pharmacists will do their part with proper cooperation from the doctor.

Personal Experience with Emetine.—Reading the current medical journals, the man skeptical about emetine value in pyorrhea will still be found, although he is now but sporadic. The truth about this drug is, as attested by many clinicians and writers, that it will kill the entameba of Rigg's disease. Most certainly, it will not relieve conditions requiring dental surgery. Conditions that

gave original cause of the trouble will immediately do so again if not relieved.

This writer, as a result of a rather early enthusiasm in the following of Bass and other exponents of emetine efficiency on the part of his dental adviser, Dr. A. Lawson, Jr., of Greensboro, Alabama, now rejoices in a most useful bridge swung to a canine tooth and incisor, which under former dental practice were condemned to extraction. Despite a characteristic looseness of the teeth before treatment, now they are firm, and rigid care is being taken of them. The slightest return of pyorrhea will be greeted with ipecac on the toothbrush and more emetine in the circulation, immediate consultation of a dentist not being overlooked. Six injections were taken in this case, three intramuscular, and an alternating three were made into the gums themselves.

Of emetine in dysentery, nothing will be here said, save that the writer still uses it, blood in the stools being the indication, without waiting for microscopic confirmation of the diagnosis. It is the first thought in hemorrhage, and not incompatible with other indicated treatment.

The Physician Drug-Addict.—In CLINICAL MEDICINE for May, request is made for comments upon the case of a physician who has become a drug-addict. It is most difficult to do aught else than to deliver a homily or call attention to some line of treatment with which the victim is doubtless familiar. In place of this, these remarks are made.

Many a splendid physician has, through overstrain or other economic conditions, become the victim of divers drugs, including morphine and "booze." The start was made in various ways, most often by pushing brain activity, in the attempt to do too much, by the use of dangerous therapeutic tools—tools that would not have been used on another. But, let that starting-business go. This unfortunate got started and society wants him to "come back." This he can do and become of great use to the social fabric and a source of personal happiness. But it seems to be a case where the main help that can be given is in arousing the consciousness of his own inherent power. You can come back, brother—do it!

Easily said, but not easily done. No! Not easily said—mighty hard to advise a soul- and body-sick brother, no matter what the desire to help him. As for its being easy for the advised one—on the contrary, it will be a mighty hard job for him, a great big man's job, a proposition where he must do the

hardest kind of thing conceivable to a physician, namely, treat himself. No other man can do it, although it most certainly can be done. This writer believes that the help-seeking brother will realize that at last analysis it is up to him and that he will make good. It is straight up to him and his conception of Deity. Eliminate self-pity realize who you are and what you are, also what you still can be and *must be*. Those sick folks need you. You have saved lives, and you can save more, including your own.

Change of location will be advisable. Hit a new place, put on a bold front, and do not overwork, either on your patients or through mental anxiety for fear you will not make good. Get that *fear* out of your mind. There are a lot of "knockers" in and out of the profession, but the majority of mankind wants to see you make good.

Maintain a good physiological metabolic balance, and realize that you *can make good*. Go to it, brother! Your case is not hopeless. This writer wishes that he could sit down before you, assume that laity-impressing look of consummate wisdom and write you a prescription. But this is impossible. Do it yourself, and realize that the indefinable but immeasurable force of good will is with you.

Skin Medication, a Lanolin Substitute.—There is a tendency to forget the value of the skin as a means for the introduction of medicinal agents. Probably this is because we fail to keep before us the picture of the corium as a network of capillaries, capable of carrying soluble material directly to the lymphatics and blood-vessels of the subcutaneous structures, thus giving prompt access to the general circulation. Often, in cases of refractory intestines or because of the inconvenience in certain cases of intravenous or hypodermic medication, the skin is the ideal route. Very often it is of untold value as an auxiliary to other procedures. Especially should the dermal route be a favored one in pulmonary and glandular affections.

The skin should be cleansed and relaxed. Soap and hot water, alcohol, benzin, and gasolin are all serviceable at times. The vehicle for the medication must be selected with a view to penetration and solving power. When an ointment is chosen, the most universally employed and effective base is wool-fat (lanolin, *adepts lane*). The phenomenal rise in the cost of this substance, largely owing to the reprehensible custom of using mainly foreign products in medicine—even as to the sheep or other raw material grown

domestically—makes a substitute advisable. Lanolin is too high-priced, both for the physician who purveys his own medicine and the one who cooperates with the pharmacist and the patient, in a real effort to avoid expensive prescribing, while always maintaining efficiency.

Thus it was with pleasure that note was recently made of an excerpt from a German pharmaceutical publication treating of the use of whey as a wool-fat substitute. The use of the milk-whey for some time by the writer, indicates that it is a complete success, and notes on the method of use are here given, so that it may be outlined for those as yet unfamiliar with it.

Take a small amount of tragacanth and soak it for a few hours in ordinary whey until it has become a jelly, then work up with more whey until a rather thin jelly of perfect smoothness has been made. Now add any preferred preservative. Alcohol may be used, if desired, only it must be remembered that tragacanth is practically insoluble in this so that it must not be added until solution is completed. Finally, incorporate with about an equal part of petrolatum.

This ointment-base will take up a large amount of an aqueous solution and the whey will penetrate the tissues apparently as well as does lanolin. Of course, the directions will be, to rub in well, the same as with any other base. Cacao-butter or U. S. P. cerate may be added to make a stiffer preparation, when desired. A little practice will surprise one with the ointment possibilities of this.

This recommendation of whey as most excellent and cheap is made by one who is rather strong on "rubbing in" his remedies available for this use, thus not being limited to mercurials and the wonderfully effective lobeline. This, however, is not a treatise on endermic medication; just a hint on whey-jelly.

A. L. NOURSE.

Sawyer ville, Ala.

PELLAGRA, AND THE GOLDBERGER THEORY

I awaited patiently the arrival of my June number of *CLINICAL MEDICINE*, to see what the "family" had to say about pellagra, only to be disappointed, for there was not a word in it about this very important disease. It seems to me that since Doctor Goldberger's declaration that the disease is the outgrowth

of faulty dieting or unbalanced rations the "family" and the medical profession at large have accepted this dictum as final and conclusive.

I am still encountering a great many cases of pellagra, and I find them just as unamenable to treatment as before we had Goldberger's pronouncement. Consequently, I am convinced that the last word has not been said as yet about the cause and cure of pellagra. Let us hear from the *CLINIC* readers.

A. W. DUMAS.

Natchez, Miss.

[Doctor, if you will run through the back numbers of *CLINICAL MEDICINE* you will find that we have never accepted the Goldberger theory as "final and conclusive." It is an interesting hypothesis, and Goldberger advances facts of extreme importance to anyone treating pellagra, yet the theory, in our opinion, fails to explain everything; indeed, is very far from doing so.

We were much interested in an exhibit made by the Post-Graduate Medical School and Hospital at the last meeting of the American Medical Association. In this exhibit there was presented a most exhaustive study of the pellagra problem, based upon studies carried on by field investigators in the south. In a number of communities a complete census of pellagrins was made, and the various environmental, racial, sanitary, dietetic, and other possible etiologic factors were considered with extreme care. It was shown that pellagra flourishes in insanitary communities; that it largely disappears when a city is provided with modern sewerage-disposal facilities; that it apparently is transmitted from person to person and from house to house; that diet does not play such an important part in its persistence or cure as we have been led to believe; that it is readily cured—especially when the patient can be transplanted to a cooler climate; and that, to put the whole thing in a nutshell, it is presumably an infectious disease of alimentary origin.

We must not jump to the conclusion that *this* is the last word. It is only the beginning. But it gives us greater reason for faith in the treatment which we have advocated in the past, and which continues to give good results. Intestinal antiseptics, saturation with calcium sulphide, and arsenic (usually administered hypodermatically as sodium cacodylate), together with skin applications and gargles of picric acid, are the remedies most

generally found of value. *And they are all antiseptics!*

In spite of the preceding I believe in the Goldberger high-protein and scant-carbohydrate diet, but as an adjunct to other measures, not as being sufficient in itself.—ED.]

CULLS FROM A PHYSICIAN'S NOTE BOOK

Money spent in correcting a wrong is a good investment.

In collecting, remember that a debt reluctantly paid is half lost.

Show me the physician who can *cure* a disease. I have never seen one.

Any man who pays too much for his goods swindles his customers.

Of all the "chickens that come home to roost" revenge takes the cake.

The person who tells all that he thinks he knows is named Frank.

Do not urge your friends to follow the good path. Hit the trail and tell them to come on.

Division and defeat not only begin with the same letter, but they are twins.

Self-denial carries away a pint of pleasure only to return with a bushel of real joy.

"Honesty is the best policy" is a rotten proverb. If that be the only motive for honesty, it is a dishonest one.

Just one little seed of happiness sown in some human heart will bring you a splendid crop of huge proportions.

People who say "revenge is sweet" are fooling themselves. It has a come-back that is as bitter as gall.

Wrath is a two-edged sword that has no handle. When you undertake to use it on others you always cut your hands.

Justice can not see very well, but Revenge usually is at hand to tell her where to strike.

Envy and Lust are demons lurking beside the road to Heaven, eager to push you into the gulf of Regret.

Do not think that the book agent is the liar supreme; the diplomat is the smoothest liar that God ever constructed.

Do not be too harsh with an old she-gossip. "The dog that will fetch a bone will carry one." You may use her as a messenger of good.

Sixty-two and one-half percent of the trouble in this world comes from the acts of those who assume to be grand-jury, judge and executioner for those whom they dislike.

A thief is one who steals your cash. An arch-thief is one who steals your good name. The law punishes the thief, but proper and

adequate punishment for the arch-thief has not yet been devised.

A. D. HARD.

Marshall, Minn.

HOW I TREAT DIARRHEA

The first thing I have in mind on being called to a case of diarrhea, be it an adult or infant, is, to establish the diagnosis with reference to the etiology of the trouble. Then one's interest in the case may be said to start up with real vigor.

The all important problem of the treatment of any disease, it seems to me, in these days of advance in our noble science, has been obscured a good deal, for the up to date student of medicine, in the overemphasized emphasis of "diagnosis," arrived at by a process of "signs and wonders and fearful things," so that there is danger of the physician becoming merely a diagnostician, when, in sooth, a real physician is an evenly balanced composite creature known as both a diagnostician and clinician. Else he is no physician at all.

I divide diarrheas into two main groups, namely: (a) that of adults, and (b) that of children, including infants.

In adults, I look for one or other of the following varieties:

1. Emotional diarrhea, sometimes seen in men and women who have been under the spell of exciting circumstances. (For instance, "anywhere in Europe"—the zone of war—in these days.) A sort of increased peristalsis, with inflammatory symptoms absent.

Treatment: Remove the cause or let the victim get used to it. The effect will disappear spontaneously.

2. Fatty diarrhea, the result of deficient pancreatic secretion, in consequence of which an excess of fat is found in the stools. Here I prescribe a fat-free diet, as, for example: (1) Lean meat, 300 Grams; toast, 200 Grams; white of egg, 100 Grams; syrup, 90 Grams. (2) Meat, toast, macaroni, potatoes, tapioca, white of egg.

Or, arranged for meals, thus: Morning: Lean meat, 100 Grams; toast (no butter), 50 Grams; coffee au lait (no cream), 1 cup. Later: Albumen-water (from 2 eggs), 1 glass. Noon: Clear soup (no fat); lean meat, 100 Grams. Later: Albumen-water (from 2 eggs), 1 glass. Night: Lean meat, 100 Grams; bread or toast, 50 Grams; rice with milk (no cream), 50 Grams.

3. Diarrhea, with proctitis, in which the stools are frequent but small in amount, con-

taining much mucus and blood and very little fecal matter, and there is much tenesmus.

4. Diarrhea from whatever cause, with which gastric symptoms are associated.

I invariably order rest in bed and a scant liquid diet.

If seen early, the bowels are emptied with calomel in divided doses, followed by a saline laxative. Then, in a few hours, bismuth or zinc and codeine compound or the sulphocarbolates, as indicated, 1 tablet three times a day. H-M-C modified (an old friend of mine), by mouth, for control of severe pain, always.

In children: First find the cause. Since diarrhea is so common in bottle-fed babies during the first or second summer if the surroundings are dirty and the air is vitiated, always look for the specific organism in the stools. In a large percentage of cases, you will find one of the varieties of bacillus dysenteriae.

I have seen various types of this disease in infants varying from a mild form of indigestion to quite severe forms of acute ileocolitis, both in breast-fed and in bottle-fed babies; and, while occurring more frequently during the summer months, it may occur at any season of the year.

In all these cases, it has been my attempt to change the character of the intestinal flora. For this fundamental idea, I am indebted to the personal advice and work of Dr. Arthur I. Kendall, offered some years ago, when we worked in the laboratories of the Harvard Medical School. The aim must be to displace or change the disposition of undesirable organisms proteolytic in nature, by regulating the patient's diet, so that carbohydrates predominate. Kendall has shown that the bacillus dysenteriae (Shiga-Flexner) or both the bacillus coli and the streptococcus constitute the usual intestinal microbic flora of babies suffering from bacillary dysentery.

My treatment after the initial laxative is essentially supportive. I say: Feed the child, but see that carbohydrates, preferably lactose, predominate. In consequence, the infecting organisms in the intestinal tract are supplanted by fermentative bacteria, while at the same time you can not be charged with the crime of starving your little patient to death.

I give the requisite amount of water with the sugar and, so, obviate the necessity of making saline infusions. To the lactose-water, given in frequent small amounts, I add Bulgarian-bacillus cultures, in order to increase the lactic-acid content, thus rendering

the intestinal tract an uncomfortable habitat for the infecting organisms.

The principle evolved by Kendall, that "fermentation takes precedence over putrefaction"—the first leading to health processes, the latter, to disease processes—has been of tremendous help to me in my everyday practice.

To put it tersely, then: the patient must be put to bed and kept quiet. Then:

"Clean out." Catharsis: Give calomel in divided doses and follow up with saline laxative. Irrigation: Use physiologic saline solution, ordinarily. If a stimulating effect is called for, use a 2-percent silver-nitrate solution until the washing returns clear. The temperature of the solution should be from 98° to 102° F.—the latter if the body-temperature is subnormal.

"Clean up." Change the disposition of the infecting proteolytic organisms, so that, instead of feeding upon the mucous lining of the intestine, they will become fermentative in nature; do this by feeding lactose in aqueous solution, with Bulgarian bacillus added.

"Keep clean." Avoid any food or other condition that will excite the regeneration of putrefactive organisms. Nourish the patient with food, as indicated above, in small amounts, more diluted, and at frequent intervals. Sometimes irrigate.

Here is a summary of the drugs used by me:

1. Calomel in divided doses until 1 grain is taken.
 2. An effervescent magnesium sulphate to follow, for complete catharsis.
 3. The well-known zinc and codeine compound, for controlling the symptoms.
 4. The sulphocarbolates, for intestinal asepsis.
 5. H-M-C modified, internally, to control pain.
 6. Aconitine, for reducing the fever.
- If called in late, in the stage of dysentery, I also use:
7. Atropine with brucine, for collapse.
 8. Solution of nuclein, in full doses, to sustain vitality and encourage resistance.

Other good drugs I have sometimes used, as occasion demanded, are: Bismuth subnitrate, bismuth subgallate, and the well-known Abbott antidiarrheal and dysentery tablets.

PHILIP A. E. SHEPPARD.

Dorchester, Mass.

[This excellent resume will be found help-

ful, I am sure. Other short papers on this topic will be found on pages 611 and following this issue.—ED.]

THE MOSQUITO COUNTRY AND THE MOSQUITO INDIAN

I am an old resident of Spanish-American countries. When I came here, I soon discovered that there are more opportunities in this country — for poor men, I mean — than in any place in the world today; and, so, with the intention of investigating, I have buried myself in the Mosquitia, of the Republic of the Honduras, a district almost unknown to the outside world. The result has been far better than my most sanguine expectations allowed me to hope for; in fact, why this country, so close to the United States, has not been invaded by landseekers long ago is a mystery to me.

This Mosquitia, or Mosquito Coast, extends from Truxillo, in Honduras, along the Atlantic Coast as far south as Bluefields, Nicaragua. This part of the Atlantic is better known as the Caribbean Sea, made famous by the crimes and bloodcurdling deeds of the pirates, or buccaneers, Hawkins, Drake, Morgan, and others, who had their strongholds on this coast and nearby islands.

Perhaps the reason for the country being unknown is owing to the fact that the lands adjacent to the sea are to a great extent swampy and that these swamps as well as the lakes in which the coast abounds afford ideal breeding-places for immense swarms of mosquitoes, from which the entire region derives its name. However, penetrating into the interior only a short way, say, twenty miles, all this changes; the mosquitoes becoming less troublesome, until at a distance of about fifty miles from the coast there are hardly any.

The vegetation of this entire region is extremely rich and varied, owing to the fact that it rains during almost every month in the year, which, also, makes the climate cool and extremely pleasant.

Immense mahogany- and cedar-trees, mingled with rubber- and zapotillo-trees (the latter producing the chewing-gum of commerce), together with palms of various kinds and other kinds of trees, many of them yielding the most delicious fruits, compose the immense forests of this region, while everywhere the banks of rivers and creeks are covered with banana-groves planted by the currents during past centuries. Gorgeous orchids,

catleyas, cypripediums, lilies, odontoglossums, and other flowering plants swing their beautiful long-stemmed blossoms in the breeze, while all kinds of flowering lianas and vines, begonias and ferns vie with each other in richness of coloring and grace of form. Brilliantly feathered macaws and parrots fill the air with shrill discordant screams, while a hundred varieties of birds delight the senses with their beautiful variegated plumage and yet others with their song. Several families of monkeys make their homes in the treetops, notable among them being a very amusing little creature with a funny white face and cowl.

As for game — talk about game in a rich tropical jungle where the white man has never hunted and the very few Indians, poorly equipped, hunt only sufficient for their larder. Then there are found here the jaguar, called tiger by the settlers; two kinds of mountain-lion, namely, the *Leopardus concolor* and *Leopardus jaguarundi* (the latter rather a small chap), the *Leopardus pardalis*, another spotted cat, and a black, very vicious panther about the size of the jaguar; these certainly make life quite interesting. In addition, I could scare up within an hour at least ten tapirs close to the place where now I am writing.

Deer, two varieties, are plentiful, while the herds of wild pigs, together with the wild-growing bananas, furnish the principal food of the Indians. The paca is highly prized for its fine-flavored meat, and it as well as the agouti, is very numerous. Four varieties of pheasant are at home here, all of the penelopines, the biggest of which is the *Crax alector*, or curasaw, about the size of your American wild turkey. Further, in December, January, and February, the lakes and swamps are full of wild ducks, coming here from colder climes to a country where they have never been hunted; a veritable ducks' paradise, where food is plentiful and enemies are scarce. However, the muskeg duck and several smaller kinds are at home here all the year around.

Do not think, though, that I am hunting all the time; for, although, a lover of the great outdoors, I am not what you may call a sportsman, who kills solely because he has the power to do so. I hunt when I need the meat and that I have always in abundance; but, murdering a wild thing just because I meet it, I do not do, unless it be the alligators, which are rather too numerous for my liking. Fish, of course, is plentiful, and turtles in such numbers that my three Indian boatmen

for illustration, yesterday gathered something like 1200 turtle-eggs in less than four hours.

And in this Garden of Eden live the Mosquito Indians. Though there are three tribes of them, not related to each other, yet, they number very few. Coming up this river during seven days' travel I find only four villages of half a dozen huts each, perhaps a hundred individuals altogether. And away from the river the country is entirely deserted and much of it totally unknown, even to the native Indians.

As I have said, the different tribes are not related to each other, and each has a language of its own. The Payos occupy the territory around Plantain and the Black rivers and the hills south toward Olancho; the Zambos live along the coast from Evans lagoon, along the Patuco River, Caratasco lagoon and as far as the Guanqui River, which divides the republics of Honduras and of Nicaragua; while the Zumos live along some of the lesser streams emptying into the Caratasco and tributaries of the Guanqui rivers. Some of the Payos speak Spanish, but Zambos and Zumos both speak a sort of Pigeon English, besides their own language.

Living along the coast and the great rivers, these latter tribes—that is, the Zambos and Zumos—came in contact with the pirates, whose policy it was to befriend them, as their impenetrable swamps and forests offered a sure refuge for themselves, and hiding-places for their plunder in case of persecution. They also left their imprint in the blood to such a degree that a pure-blooded Zambo is a rarity, while English names are common, as I meet every day Indians calling themselves Wilson, Thomson, Morrison, Smith, and other like names. There is also an admixture of negro blood, doubtless from slaves that escaped from the pirates; for, the Hawkes as well as Drake added to the noble profession of scuttling ships and cutting throats the lucrative one of slaving.

These Indians are polygamous, and I want to call attention to a peculiar custom of theirs, which is interesting from a medical standpoint. It is this:

The Indian will ask the father of a little 6- or 7-year-old to give her to him as wife. This acceded to, the little girl is presented to him and she is advised of the fact that he is her husband and that she must obey him. She stays with her parents, and her new husband sends part of the product of the chase to her home, as well as bananas and whatever he sees fit to clothe her with. He visits her whenever he feels like it, and,

although intercourse may not be attempted, he fondles her genitals and induces her to fondle his. Upon my expatiating on the immorality of this proceeding, I was told that this was done to ripen the child quickly into womanhood and make her strong.

As a matter of fact, I have seen extraordinarily strong women among the Zambos. I have known young mothers 13 or 14 years old to carry a load of 75 pounds for 10 miles, besides their babies. I have never yet seen a nursing mother who did not have a superabundance of milk for her baby, and have seen one young woman, carrying 5 bunches of bananas and the milk dripping from both of her breasts with every step. There are women here over 80 years old who are strong and healthy, although badly wrinkled.

The principal diseases are affections of the skin, a species of eczema and ringworm, with which most of them are afflicted. Besides, I find a species of leukoderma, called in Mexico *jiricua*. This is thought to be infectious, although I am inclined to the belief that it is transmitted by a culex, a little fly that abounds in the tropics. Sometimes the spots are white and extend over the limbs, body, and even over the face in small patches, which may become confluent. This I find is a subcutaneous variety. The other, in which the spots are black or dark-blue, is cutaneous. Pure whites and negroes seem to be immune, for in thirty years I have never seen an individual of either race who had contracted it.

Sometimes, but rarely, pneumonia is encountered, and more rarely phthisis. Malaria is unknown up here on the Patuco River though prevalent near the seacoast. What kills my Indians, though, is trouble of the digestive apparatus and the intestinal tract, they being tremendous eaters. They have accustomed themselves to do without salt, which is very scarce. Also, sometimes, after a big hunt, they eat meat that is half spoiled, a fact which, in my opinion, also is to be blamed for their skin troubles.

The religion of these people is very rudimentary, and they have no clear conception of what becomes of man's soul after his disintegration. They say that the medicine-man catches the spirit, and puts it away; but where it goes to they do not seem to know or care.

The medicine-man, or *suquia*, is a great fellow among them. They are divided into two classes, the doctor and the *suquia*, the latter attending to spiritual matters. The doctor's methods do not materially differ

from those of his fellows in Africa, using native herbs, decoctions, and incantations. So, I will pass them by.

However, the *suquia* proper, the spiritual medicine-man, is the one who directs all the peoples' affairs, not because he holds any recognized authority, but by working upon their superstition. The *suquia* sends word that during such and such a month nobody must eat the flesh of this or that animal, and none will eat it. The other day, a courier came from the Caratasco district, where a famous *suquia* lives, bringing word that on a certain day a tremendous storm would sweep over the country and destroy villages, rice-fields, forests, and game, unless every Indian in the country would send one dollar, in which case he would use his influence to avert the disaster. Every Indian in my district sent in the dollar, and - he did prove himself a tremendously powerful medicine-man, indeed, for, in place of the storm, we had a most beautiful day. Was it not worth the dollar? one Indian friend asked me

But it is in a case of death where the great *suquia* shines. After the body has been buried, it is supposed that the spirit still haunts the place where he used to live, and every day food is served to him just as if the departed were still present. In the evening, the food is thrown away. When I inquired the reason for this, I was told that the nourishment in food was invisible and that the invisible spirit had taken all the nourishment out of it, so, what was left was not any more fit for use. This feeding of the spirit persisted in until the *suquia* makes his appearance and the spirit is caught by him and put away.

It takes a great deal of supplication to get the *suquia* to consent to come. Of course, there are conditions to be complied with. Already the medicine-man has discovered that on a certain day wild-hog meat is bad medicine, but pheasant and deer are good medicine. Domestic chicken is good medicine, sometimes, and sometimes only paca or fish is to be eaten. Several barrels of *chicha* must be there. The latter consists of the fermented sap of sugar-cane and is very intoxicating.

The day set for the ceremony sees a motley crowd of Indians assembled who already have tasted of the barrels of *chicha* and are dancing to the sound of the tom-tom until the arrival of the *suquia*. In the evening, the real ceremony begins, when the *suquia* enters the dance, chanting in a low voice in the language of the spirits, which none of the

bystanders may understand. After a while, he will translate his conversation to those present, imparting to the relatives the spirit's last wishes or commands. For instance, the spirit has left on his plantation 100 coconut palms, and these must all be felled. The house he had lived in must be torn down. If it is a woman, her sewing-machine (they use sewing-machines) must be broken up.

Sometimes, though (with an eye to the food supply), the spirit will not be caught the first night, because he or she was at outs with some member of the family, and then the ceremony is repeated until the food is nearly gone. Then the spirit at last is caught carefully wrapped in a piece of cotton batting and taken by the medicine-man to the grave where it is deposited and admonished to go to the place where spirits belong, and never to return. That ends the ceremony and everybody, especially the relatives, feels relieved of the obligation of feeding the invisible spirit, and the money the *suquia* carries away with him.

What a chance, here, for missionaries! especially as the Indians greatly wish to become Christians. Already they are imitating the white man by baptizing their children. They do not know the meaning of it, but they will call in anyone to do it for them, preferably a white man, because he says certain words the Indian does not know and which must, certainly, be good medicine. I have told them that I would try and get some holy man to come out and teach them, and they are as pleased as children with the idea.

The government of Doctor Bertran (the president of Honduras) has been trying to lift up these children of nature and in a few places has established schools lately. The teachers tell me that they are surprised at the intelligence of the children, for they learn and absorb wonderfully quickly. But it is not only the intelligence in which they certainly are not lacking, but their respectfulness, their obedience and their orderliness are something wonderful. No harsh word is spoken to them, for none is needed; and although school is conducted in grass huts, they might well be called model schools, considering the quality of the pupils.

The Indians themselves are very docile and amenable to reason, as I had especial occasion to verify yesterday. A young woman, married in the manner already stated, seems to be in love with another young fellow and the other day ran away from her husband - she and another girl, who, however, is not

married. When the two found that they were pursued rather closely, they left their boat and took to the jungle. The pursuers were the irate husband and the two brothers of the girls, who, indignant because of the disgrace brought upon them, intended fully to mete out exemplary punishment to both. The girls escaped, however, and were not heard from anymore, as the jungle is almost impenetrable.

Day before yesterday, I was rather astonished when, like two dusky nymphs, the girls appeared before me, having swum the river, braving the danger of hundreds of hungry alligators, to come to the white man, who would respect and protect them. I gave them some tunos (a cloth made by pounding the bark of certain trees), to cover themselves, and turned them over to my old cook. They told me that they were afraid that their brothers and husband would shoot them like tapir and that they had lost all their extra clothes in the boat, while the rest had been torn off their bodies by the thorns and brambles of the jungle.

Yesterday the pursuers arrived, looking, though, as if they were ready to kill. After having made them eat with me, I told them about woman's feelings and sentiments, and that, by respecting these and conceding to them rights, the white men, who formerly were like they are now, had risen to their present eminence. The men listened very respectfully and were mollified to the extent of promising that the girls should not be punished for their escapade. By the expression of the girls' faces, I knew that they meant what they said. So, I told the girls that, if they thought they were not safe, they might stay, as I could employ them; however, they went along willingly, even happy that their trouble was over.

What a field this for a Christian Mission! How could I manage to get some such—of the right kind to come down here? I, with my Indians, am willing to build for them a chapel and to plant at least 10 hectares (25 acres) in cacao, which when bearing, means a steady income of from 3,000 to 10,000 dollars a year. All I ask for in return is, a resting-place for my wife's body and for myself.

This is a *bona fide* offer. There is plenty of room for other decent and clean people with small capital. Land that on account of its fertility would be worth in the United States \$500.00 or more per acre can be had for nothing here. There are two ways to obtain land in these parts: one, by purchase from the government at \$1.00 per acre for

the best, while the other way is by lifelong tenure or rental, for which is paid yearly 10 cents per hectare (2 1-2 acres) as long as it is not cultivated, and 5 cents yearly when cultivated. There is no tax on land. Besides this, the surveyor must be paid at the rate of 20 cents per acre; only, the amount of land must comprise several thousand acres, as otherwise the government surveyor will not come down.

Many crops can be raised that will be good moneymakers, but the best is Cacao theobroma—cocoa, I believe you call it. Once planted, there is little work to it, and after it comes into bearing, five years from planting, the income is steady and always increases. Besides the shade-trees which the cacao needs as protection, one might plant mahogany or cedar, which, although not readily marketable, will give an added, and not mean, value to the land itself.

I'd like to get some neighbors, and I am willing to help any honest man or woman all I can. You, doctor, who barely can make out a decent living, here is a chance for you. But not only the doctor, but the friend of the doctor, also, anybody who is clean and decent. Owing to its situation, the Mosquitia has never seen a revolution, and, if I can manage to get only foreign colonists here, there never will be. The country is easy of access, as the rivers are navigable and steamers have access to the mouths of these rivers. Hence we can do without railroads.

So, then, come, friends, and let us form a colony of nice educated people. The greater the number, the more will the land be worth.

I won't have anything to do with a stock company, though. Get up a collectoin for a tired brother who needs a vacation and send him down to investigate and then believe him and follow his advice. If he is a farmer's son, so much the better. Don't wait until corporations take your chance from you, Write me to the address below.

A. R. HOLLMANN.

In care of Laffite, Alvarez y Cia.

La Ceiba, Sp. Honduras.

Via New Orleans.

[Doctor Hollmann's account is very interesting and, shall I say tempting? To the lover of nature at her best, such as the doctor describes her handiwork in his beautiful corner of the world, his offer presents all sorts of inducements!—Ed.]

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

[Continued from page 546, June issue]

THE girls themselves, through lack of a knowledge that should be given to all, aggravate their own plight by a sacrifice to good looks. The corset, which is believed to be necessary to preserve a good figure, is laced so as to exert a forced pressure from the waist downward—just where there should be upward support, instead. This is not all, by any means, but there is no need to be more specific. Pretty much everything about the whole situation is wrong.

If ever the application of corrective and preventive measures was wanted, it is here. The shop-girl is a far more deserving object for missionary effort than are the heathen of distant lands. But, in this respect, she has the disadvantage of being close at hand instead of on the other side of the world. I do not mean that the shop-girl requires religious rescue, by exhortation, tract or other means. That has nothing to do with those needs that cry out for help as a part of the progress of the hour, in these days of enlightenment and aggressive hygiene. The moral aspects may be left to other hands; the physical, however, are open to the world and should be cared for, not alone because of the present, but for the sake of future generations; and no broad measure of any kind is complete which does not take into account another, and larger, population, marching now toward us irresistibly out of the nearer depths of time.

I cannot too strongly advise and commend all who have, at least, the health and general good of the whole public at heart, now and to come, to communicate with the officials of that society. The work and the way to do this will be clearly pointed out.

Human possibility holds out no higher or more worthy thing than helping the helpless or showing the unhelped how to help themselves. Those who would convert sympathy and altruistic impulse into telling action have here their chance.

In order to avoid the danger of excessive fatigue, sleep is indispensable, but there are other ways of securing rest. Some temperaments derive much benefit from occasional periods of complete idleness, other temperaments more nervous and restless get no satisfaction from being idle. Continuous application to one form of work is much more fatiguing to nerve and muscle than varied work. I have seen business men and students come to the gymnasium, all fagged out from five or six hours of mental work, get into various forms of muscular work with zest and energy. In a model boys' school famous for the rapid progress of its students, the boys alternate periods of study with short periods of active play. The principle involved here is that, by changing from mental to physical work or from one form of mental work to another, the individual is able to accomplish a larger amount of work with less fatigue than by working continually at the same kind of work.

One of the most salient characteristics of modern life is, the increasing amount of leisure time for recreation made possible by the shortening of working-hours. The advent of specialization, labor-saving devices, the telephone, telegraph, and automobile make it possible for all classes of people to do more work in less time than before. But work is more intensive and consequently more fatiguing: The result of these changes is, a greater need for relaxation and more time available for recreation and pleasure. The proper use of leisure time has much to do with health, efficiency, and happiness.

Play is generally considered as belonging to childhood only, but it is really a vital part of life at all ages. The need for play and recreation is satisfied in various ways. Sedentary workers derive the greatest benefit from outdoor physical recreation, such as golf, tennis, fishing, hunting, collecting, and photography. Leisurely reading of the treasure stories of literature, music, and parlor

games also afford a certain amount of mental relaxation to daily work.

The outdoor avocation or hobby has more in its favor than any other. It is readily procurable in "doses" suitable to any temper or temperament and adjustable likewise to the size of any pocketbook. The essential point with most persons is to make a beginning and acquire a desire for acquaintance with the birds, familiarity with the procession of the wild flowers or the discovery of beautiful bits of scenery that may be reproduced by the camera.

Many people who realize the importance of outdoor recreation neglect it, because they have not formed the habit of making use of weekends and holidays for this purpose. There are innumerable ways of getting the benefit of outdoor recreation while leading an active city life. Even in New York City, where the conditions are perhaps the least favorable for getting out into the country easily, the problem is solved in various ways.

There is a group of professional and business men who are organized in a fresh-air club; they make up a schedule of walking-trips during the autumn and spring and skating parties during the winter. They meet at the railroad-station Saturday afternoons, ride out ten or twenty miles from the city, walk five or ten miles across the country or up a mountain, spend the night at some country inn, walk ten or twenty miles on Sunday, and return Sunday evening, invigorated and ready for another week of hard work.

Another group of friends go off in a motor boat, either up the Hudson River, down the Bay or into Long Island Sound, eat and sleep aboard and return Sunday evening. Two teachers of my acquaintance spend Saturday afternoon and Sunday canoeing up the Hudson and camping out at some of the many beautiful spots along the palisades, between New York and Peekskill.

In the vicinity of every city, opportunities for physical recreation are available in the open country, woods, hills, lake or stream. A very essential point to remember in this connection is, that frequent periods of outdoor physical recreation are far more beneficial to persons working under high pressure than one whole month's vacation following eleven months of continuous application.

Frequent outings in the country are not only beneficial to physical health; the effect

upon the mind is at least equally good. The mind is rested and refreshed by a change of surroundings, seeing new faces, eating different food, sleeping in a strange bed. The worries and troubles are forgotten and the mind regains its elasticity and freshness for clear thinking and efficient work.

Weekends and occasional holidays serve a good purpose, but most of the people need a longer period of rest and vacation about once a year. Those who disregard the need for an annual vacation and work continuously year after year furnish the recruits for nerve-specialists and sanitariums. A story in the newspaper, describing the strenuous life of a young man twenty years old, who, by continuous application without any vacation, had earned his election to the presidency of a large New York bank, brought him a large number of circulars from sanitariums for neurasthenics. The rapid development of the summer-vacation idea in recent years is the natural result of the increasing demand for intensive mental application in business and professional life. The judicious use of the summer vacation serves to restore the individual to a normal physical and mental state after months of more or less unhygienic living.

Camping, cruising, touring, and tramping afford the largest amount of recreation and recuperation to tired-out mental workers.

Summer-hotel life, with its idleness, rich food, and much dressing, also strenuous traveling and sight-seeing are not a desirable form of vacation for sedentary workers. A simple, active outdoor life in the country or on the water is far better to restore vitality, revive ideals, and help the individual to live a broad, happy, and effective life.

Now, while Europe is at war and the United States is talking of preparedness, it is well to remember that the real fight of the world is for health. This is a struggle not confined to any one nation. Disease is a common foe. It is a humanitarian motive, as well as a scientific one, that should animate physicians in all their deliberations.

There is in human nature a desire for conquest that ever has been a constant driving force in human endeavor. The soldier strives to overcome an attacking foe. The civil engineer conquers the hard conditions he meets in driving a tunnel through rocky walls. The inventor and the scientific investigator wrest away from nature its secrets. The moral reformer and the theologian seek the subjugation of moral evils. And it is the

duty of the physician to attack the most subtle of all foes, the minute and elusive causes of diseases; and every such conquest gives inspiration for further battle in the world's fight for health.

It is our duty as physicians to break down the barriers of ignorance and prejudice that are ever undesirable deterrents of progress in social welfare. The common purpose to conquer disease and to make human life safer, healthier, and happier is a factor in bringing peace in the world, because the nations of the world become banded together in common sympathies and endeavors.

We must sympathize with the sufferings of mankind. Unless we think humanely, we shall not be able to give our best to this work. This conception of our duty indicates the passionate devotion that has ever been the driving force of those who undertake great things for human welfare, whether in the name of religion or of science.

The problems of health and hygiene are largely social. They are the results of the close social living-relations of humanity. Man is gregarious and his desire for companionship is stronger than his power to protect himself from the undesirable results of living at too close a range. In developing these gregarious habits, society has rarely asked itself whether these habits are taking it. Disease, it has been assumed, as a matter of course, must be cured, if possible, but, that society has in itself the power to prevent much of disease, by repenting of its past slothfulness and *laissez faire* attitude and by organizing on lines of prevention and protection, is a realization of comparatively recent origin.

One task of the medical profession is, to overcome the inertia of years that has developed by inattention to the laws of health, and to awaken a sense of individual responsibility. A public understanding, growing in its intelligence and moral earnestness, must be a prime factor in achieving success. It is not solely a question for specialists—the interest of the people and their cooperation are necessary to this end.

In nearly every large city, there are now public-welfare communities or societies that are mainly educational. Much work is being done toward reducing infant mortality. Of great benefit is the teaching of mothers the right way to modify or prepare nursery-milk for infant consumption and to make them realize the importance of maternal nursing,

the greater chance for life that the breast-fed baby of the poor woman has over the child of the well-to-do when nourished in any other way but the natural one.

Mothers must be shown the important and wonderful reduction in infant mortality that can be secured through properly conducted attention to child hygiene, and the tremendous and national significance of this fact. That the results which can be secured are well established and certain, is shown by such work wherever it has been undertaken. It is the duty of municipalities to take over the work, as only by the public and city-wide administration of this problem can the fullest results and permanent benefits be secured. Private funds should be used only to show the way.

The New York City board of health spends \$350,000 a year on milk-stations and on infant hygiene, which is looked after at some fifty stations. Chicago, I believe, and Cleveland, Milwaukee, and perhaps other cities have special child-hygiene departments in connection with the board of health.

There are certain evils which are a more serious menace to the welfare of communities than are typhoid fever or other contagious diseases. What has been but too aptly termed the social evil has long been the theme of earnest consideration on the part of men and women whose aim has been the purification of the moral atmosphere of their respective communities. The best-intentioned people differ radically with regard to the methods to be pursued.

The Municipal League of San Francisco, the offspring of the clearing of political atmosphere which had cursed that beautiful city under Schmitz and Ruef, has won golden opinions for its clear-sighted policy on many important municipal problems. In accordance with the modern principle that vice and crime are manifestations of disease or degeneracy of mind and body, either inherited or acquired—chiefly the former—the league has set an example worthy of thorough investigation by philanthropists and municipalities.

A plan of action has been evolved under which the unfortunate victims of vice are treated precisely as are those having smallpox, diphtheria or other contagious disease. Not only are their physical ailments treated in the clinic, but their moral infirmity receives kindly and properly directed attention. The source of the malady is sought in the patient's environment, and an earnest and practical attempt is made to remove the cause, as is

done by health-officers in the case of, for instance, measles or scarlet-fever. A close study of the work done along these lines by the municipal league mentioned doubtless would furnish much valuable information, on this important hygiene subject, to philanthropists and municipalities contemplating similar action.

Not long ago, an English physician predicted that the face of the average Englishman would eventually become of a criminal type. This, he held, would follow through the decline of the birth rate among the better classes and the accelerated reproduction of the lower types. I have read other gloomy prophecies of national degeneracy through the operation of heredity and I recently came across an issue of *The Quarterly Review*, in which a Doctor Tregold makes this prognostication:

"The time will certainly come when every state, in its own interest, will have to exercise some control over the condition, not only of its present, but of its future citizens. If this control is not exercised and if social science does not keep pace with humanitarian sentiment and the undoubted tendencies which exist to aid the survival of the degenerate, the decay and extinction of the nation that neglects it is inevitable."

Many people are of the opinion that alcoholism, feeble-mindedness, and like ills are congenital defects, and the remedy is believed to lie in preventing reproduction by those afflicted with inherent degeneracy.

But all reckless predictions regarding steady national deterioration into a degenerative type may be safely discarded. Much foolishness is uttered in the name of science. As to the relative parts played by heredity and by evil social conditions in the production of the mentally and physically unfit, there is no clear line of distinction. One is interrelated with the other; and undoubtedly no action in respect to either would, if taken separately, reach to the vital center of the problem. Obviously any general system of prohibiting reproduction by defective men and women would be of little use as a preventive of degeneracy or unfitness as long as bad housing, neglect, poverty, the drink-evil, and many other contributions to human breakdowns continue to operate.

Only pedants ignore the fact that no real elevation of race standards can take place without a corresponding betterment of social conditions for the masses. As a matter of duty, the state ought to supervise the care of

all its weak and defective citizens, and its responsibility to them could easily be made to justify their segregation in colonies where reproduction of their kind would be impossible. But this is a humanitarian matter, not one of eugenics. An ideal society is one in which there are no weak members, no degenerates, and no mental deficient. But such an ideality also presupposes a society in which ignorance, poverty, crime, and low morality are absent.

For over ten years I have had much to do with hydrotherapy. I have some very decided opinions on the effects of baths, these being based upon close observation and quite an extensive experience. But every time I listen to a bunch of wouldbe authorities on this subject I am reminded that knowledge is elusive. It is exceptional when the essayist escapes without causing an argument or being flatly contradicted.

It is not given to common mortals to comprehend the merits of these questions, much less to take sides in the inevitable controversy. We may fail to grasp the importance of such a thrilling performance as that of the bacteriologist who claims to have reproduced malaria-germs to the fourth generation, as one would raise chickens. We may be duly shocked by such "data" offered by the sanitarians, showing that "probably" fifteen million babies die in their first year of life; that the world's infant-mortality rate is one every other second. But, after a recent experience of mine, I should hesitate to enter into a discussion of what to do about it. If the "authorities" cannot agree, an ordinary doctor, such as I am, need not deplore his seemingly feeble intelligence.

Curiously enough, one subject with which many of us profess tolerable familiarity perplexes the world's hygienists as much as anything. That is baths. What is a bath? "Bathing may be defined as the act of applying water to the skin," we are informed by one versed in hydrotherapy. After this, we should feel sure of comprehending what follows. Unfortunately for this confidence, the bath, physiologically speaking, by no means is a simple proposition; or, if it is, the scientists won't have it so. When water is applied to the skin, what happens? A large number of learned doctors - many of them authors of worldwide eminence - debated this question excitedly at a certain meeting. It appeared that nobody quite knew; or, if anybody claimed to know, somebody else was prepared to take the negative.

Among the Books

NEW EDITIONS OF OLD BOOKS

When new editions of well-known textbooks are published, it hardly seems necessary to do more than to call attention to the fact, unless the new editions present some important changes. Accordingly, we acknowledge in the following a number of volumes, the value of which is attested by the fact that new editions are called for.

"Orthopedic Surgery." By Edward H. Bradford and Robert W. Lovett. Fifth edition. New York: William Wood & Co. 1915. Price \$3.75, net.

"Textbook of Nervous Diseases; for the Use of Students and Practitioners of Medicine." By Charles L. Dana. Eighth edition. New York: William Wood & Co. 1915. Price \$4.25, net.

"Medical Lectures and Clinical Aphorisms." By Samuel Gee. With Recollections by J. Wickham Legg. Fourth edition. London: Oxford Medical Publications. 1915. Price \$2.00.

These delightful wanderings in the high-ways and bypaths of medicine and of medical history are decidedly worthwhile.

"Sexual Impotence." By Victor G. Vecki. Fifth edition, enlarged. Philadelphia: The W. B. Saunders Company. 1915. Price \$2.25, net.

"Venereal Diseases: A Manual for Students and Practitioners." By James R. Hayden. Fourth edition, thoroughly revised. Philadelphia: Lea & Febiger. 1916. Price \$2.50.

"Diseases of the Stomach and Upper Alimentary Tract." By Anthony Bassler. Third edition, revised and enlarged. Philadelphia: The F. A. Davis Company. 1916. Price \$6.00.

"Lecture Course to Physicians." By George Starr White. Fifth edition. Los Angeles: Published by the author. 1916.

"Treatise on the Principles and Practice of Medicine." By Arthur R. Edwards. Third edition, thoroughly revised. Philadelphia: Lea & Febiger. 1916. Price \$6.00.

"Practical Physiological Chemistry." A book designed for use in courses in practical physiological chemistry in schools of medicine and of science. By Philip B. Hawk.

Fifth edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co. 1916. Price \$2.50.

"Reference Handbook of the Medical Sciences." Embracing the entire range of scientific and practical medicine and allied science. By various writers. Third edition, completely revised and rewritten. Edited by Thomas L. Stedman. Volume VI. New York: William Wood & Co. 1916. Price: cloth, \$7.00; leather, \$8.00; half morocco, \$9.00.

This reference handbook will be complete in eight volumes.

SOME BOOKS FOR THE FAMILY

Here is a small list of books that are intended fully as much for intelligent mothers as for physicians.

"What Every Mother Should Know"—about her infants and young children. By Ch. G. Kerley. New York: P. B. Hoeber. 1915. Price 35 cents.

This little book may be placed in the hands of mothers of moderate means and is intended to provide them with concise, readily understood and practical instructions for the care of their little ones.

"Infant Health: A Manual for District Visitors, Nurses, and Mothers." By J. (Shawnet) C. MacMillan. Oxford Medical Manuals. London. 1915. Price 75 cents.

William Osler says in his foreword to this "Manual" that it is full of sound knowledge and common sense and could well be put into the hands of intelligent mothers.

"Your Baby: A Guide for Young Mothers." By Edith B. Lowry. Chicago: Forbes & Co. 1915. Price \$1.00.

On the principle that the education and care of the child should begin generations before its birth, the author does the best she can, and, so, starts with the present generation, by endeavoring to impress upon the mind of the young wife the great importance of training her own self for motherhood and also of beginning to train her baby as soon as she becomes aware of the fact that she is to become a mother. The necessity of medical care during pregnancy as well as after delivery very properly is insisted upon, and

almost one-half of the book is devoted to what one might designate as the preliminaries. Concerning the care of the baby itself, the author attempts to teach the doctrine of applying common sense and of exercising moderation. This little volume is certain to prove of service to young women; and to old women, too—if there are any.

PATERSON: "EMBRYOLOGY"

A Manual of Embryology. By A. Melville Paterson, M. D., F. R. C. S. Oxford Medical Publications. London: 1915. Price \$2.75.

The study of human anatomy is undoubtedly made more interesting by a concomitant investigation of comparative anatomy and embryology; indeed, the author is justified in claiming that most of the problems of human anatomy can be solved by the aid of these subordinate sciences. An exact study of human anatomy, which is prerequisite more particularly for the surgeon, is therefore properly supplemented and facilitated by that of embryology. The author presents the salient facts of this science in the volume before us.

KELSON: "DISEASES OF THE THROAT, NOSE AND EAR"

Diseases of the Throat, Nose and Ear. By William H. Kelson, M. D., B. S., F. R. C. S. (Eng.). Oxford Medical Publications. London: 1915. Price \$3.00.

This book has been written for general practitioners and senior students, and therefore contains full details regarding procedures such as the doctor himself usually undertakes, e. g. the removal of cerumen; but to those which he generally passes on to the specialist, such as the mastoid operation, only brief reference is made. The book is fully illustrated.

PAGE: "AUTOMOBILE REPAIRING MADE EASY"

Automobile repairing made easy. Shop methods, equipments and processes. A Complete Treatise Explaining Approved Methods of Repairing All Parts of All Types of Gasoline Automobiles. Showing all the Latest Developments, based on a Wide Actual Repair Experience. By Victor W. Pagé, M. W. New York: The Normal W. Henley Publishing Company. 1915. Price \$3.00.

Being entirely innocent of the slightest knowledge of automobiles and similar con-

trivances for making haste (slowly?), the reviewer "passes," contenting himself to give the full title of the book. The work itself seems to be just as full as the title, to judge from the 1033 pages of text and 27 pages of index.

ASCH: "TREATMENT OF GONORRHEA"

Twelve Lectures on the Modern Treatment of Gonorrhea in the Male. By Dr. P. Asch (Strasbourg). Translated and Annotated by Faxton E. Gardner, M. D. Illustrated. New York: The Rebman Company. 1915. Price \$1.00.

This small, but practical treatise on gonorrhea in the male is of interest because it presents the teachings of the French and German schools, and because the translator has been at pains to point out the different views of American authorities, wherever it is of value to do so. The treatment advocated by the author is that which he has found most useful in a personal experience extending over fifteen years of special practice.

The translation is well done, throughout, and the reviewer knows from strenuous experience what it means to translate scientific treatises; nevertheless occasional evidences of the original construction persist such as "the therein contained gonococci" or "I prefer to have the patient inject too little than too much," and a few similar passages in which the task of translation was evidently hastened. This does not however, detract from the intrinsic merit of the work.

BERKELEY AND BONNEY: "GYNECOLOGY"

A Guide to Gynecology in General Practice. By Comyns Berkeley, M. A., M. D., M. C. (Cantab.), F. R. C. P. and Victor Bonney, M. S., M. D., B. Sc. (Lond.), F. R. C. S. (Eng.), M. R. C. P. (Lond.). Oxford Medical Publications. London, 1915. Price, \$6.50.

This book is written for the practitioner, to assist him in supplementing the academic knowledge of the subject acquired during studentship with a practical understanding of its clinical intricacies. The subject-matter is arranged in five parts, the first of which deals with the examination of the patient, while the second and third parts are concerned with the nature and significance of the symptoms elicited on examination, and with their interpretation. The reviewer is impressed with the practical and serviceable

manner in which the different symptoms are discussed and elucidated. Part IV is devoted to the treatment of gynecological conditions, and it should be remarked that the authors have deliberately omitted all details of operative technique from this part, referring for information on surgical gynecology to textbooks on the subject.

A valuable addition to this work is found in Part V, in which the medicolegal aspects of gynecology are subjected to a sufficiently detailed investigation to prove of service to the practitioner.

The illustrations are well drawn, and mechanically the volume is in conformity with the excellency usually shown in the publications of the Oxford Press.

CAREY: "BACTERIOLOGY FOR NURSES"

An Introduction to Bacteriology for Nurses. By Harry W. Carey, A. B., M. D. Philadelphia: The F. A. Davis Company. Price \$1.00.

At the present day, the need of a certain amount of information in bacteriology for nurses is self-evident. The difficulty is only to determine how much of this information is to be given. The author has prepared the present volume on the basis of his notes for lectures given, on the subject, during the last eight years in teaching the nurses of the Samaritan Hospital Training School. He presents the principles of bacteriology in simple and clear language. Practical applications are made, of course, in so far as the subject bears upon the clinical work of the nurse. A useful glossary of technical terms is appended.

ROBINSON: "LIMITATION OF OFFSPRING"

Fewer and Better Babies, or the Limitation of Offspring by the Prevention of Conception; the enormous benefit of the practice to the individual, society and the race; pointed out and all objections answered. By William J. Robinson, M. D. With an introduction by A. Jacobi, M. D., LL. D. New York City: The Critic and Guide Company. 1915. Price \$1.00.

With this somewhat lengthy title, the author announces his work which forms, as it were, a culmination and climax of his persistent agitation and literary activity for many years past. Not that Doctor Robinson limits his literary contributions to the subject dealt with in the present volume; but

he is well known to our readers as a fearless advocate of the principles laid down in it.

The reviewer does not feel justified in entering at length into the subject-matter of the book in this place; he hopes to do so in another connection. On the other hand, he does not believe it right to withhold announcement of this important book until a more convenient time. The subject is too urgent for that. So it may suffice for the present to inform our readers that this volume from Doctor Robinson's pen has appeared. The author is a forceful and trenchant writer, and one writing with authority on the topics connected with his special field of work. Let "the family" read his book.

STERN: "BLOODLETTING"

The Theory and Practice of Bloodletting. By Heinrich Stern, M. D., LL. D., New York: The Rebman Company. 1915. Price \$2.50.

Whoever has devoted some attention to the periodical literature on bloodletting knows that in the last ten years the number of advocates of this remedial procedure has increased and that of its opponents decreased. The revival of bloodletting for therapeutic purposes is due merely to a better understanding of the functional changes following the operation, to a closer clinical observation of the cases subjected to it, and to the fact that the efficacy of this method over many other measures has frequently been demonstrated and recognized. The author predicts that bloodletting, the oldest of man's remedies, will regain its full citizenship in the realm of therapeutics.

MITCHELL: "HOSPITALS AND THE LAW"

Hospitals and the Law. By Edwin Valentine Mitchell, LL.B. New York: The Rebman Company. 1915. Price \$1.75.

The purpose of this volume is, to supply a short analysis of the general propositions of law relating to health institutions, and to make it readily comprehensible to those who are professionally or otherwise interested in such establishments. The author discusses concisely the rights and responsibilities of institutions, of their officials and attendants; also the principles regulating their administration. Then he takes up the questions of foundation and organization, of remuneration and support, and the like, and finally deals with the subject of military and naval hospitals. A useful volume.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6213.—“Cerebral Anemia and Arteriosclerosis.” J. A., Ontario, asks for our opinion and advice concerning the case of a farmer, 77 years of age, who suffers from periodical “spells” of unconsciousness, associated with distress, flushing of face, and nervousness. The blood pressure is 180, systolic, 70 diastolic. There is a mitral systolic murmur, transmitted to the right and to the center of the sternum. His pulse is 78, regular, usually of considerable tension. He complains of a peculiar feeling in the head, and of spells of dizziness. The doctor suspected cerebral hemorrhage and treated him accordingly. The 24-hours’ amount of urine voided is only 587 Cc.

The report from our laboratory shows that the urine has a specific gravity of 1.033; total solids, 45 grams; total urea, 18 grams; also that it contains a few renal cells, a few crystals of calcium oxalate, and very many colon-bacilli.

We believe that this man suffers from attacks of cerebral anemia coupled with some arteriosclerosis; which is not unusual in a man 77 years of age. The blood pressure does not suggest cerebral hemorrhage, being too low for this. With a tendency to hardening of the arteries, associated with a mitral insufficiency, attacks of cerebral anemia would not be astonishing. It will probably be found that these attacks occur more particularly after indiscretions in diet and the patient should be especially warned against committing such.

After full elimination has been established, it must be maintained, more particularly with respect to the urea output. Regular habits of eating and moderation in work are indispensable. We should give this man boldine hydrobromide, say, three granules of 1:64 grains each, three times daily. A cardiac tonic, preferably strophanthin, will be of value for its action on the heart, while vera-

trine will aid in establishing the circulatory equilibrium. If strophanthin does not produce results, we should advise digitalis (as in the form of digipoten) or, even better, the following combination: digitalin, gr. 1-128; strophanthin, gr. 1-5000; strychnine sulphate, gr. 1-500; sparteine sulphate, gr. 1-64; glonoin, gr. 1-500; cactoid, gr. 1-128. Such a dose (in tablet) to be taken every four or six hours.

QUERY 6214. — “Traumatic Inguinal Hernia.” W. F. S., Indiana, submits the history of a case of inguinal hernia and asks for expressions of opinion and for reports of similar cases. The Doctor writes:

“A man of 47 years, well preserved, occupied in the collection and reporting of local commercial retail conditions, came into my office and said that he had just come from the bath-house, where, after undressing and starting for the swimming-pool, he slid his right hand along the groin, to cover the privates (a habit, quite common, born of false modesty), and then discovered a large, soft tumor, but felt no pain connected with it. He wanted to know what it was and asked me to give any needed attention. He was unable to recall any incident that might have produced the injury. Following my advice, he returned on the morrow for further treatment, and then gave the following history.

“The man had been annoyed by retention of his urine and was taking treatments by a local surgeon, who had diagnosed stricture of the neck of the bladder. At each treatment, a curved steel sound had been introduced into the bladder and rotated, with application of leverage, the tip of the sound touching at different portions of the bladder-wall. During one treatment, this use of the sound caused extreme pain in the right inguinal region, and soreness followed. The man was assured by the physician that it

meant nothing serious and that the pain would soon disappear. At the succeeding treatments, he had refused to allow the employment of leverage, because of the pain produced. His surgeon at that time had left the city for a short stay, so that, alarmed at his discovery of the tumor in the groin, he came to me for advice.

"All this was told without any perceptible shadow of ill feeling toward his medical attendant, nor has he evinced any such sentiment at any time since. The man ended by asking me the question which I am making mine, also; namely:

"'Could the bladder-wall have been carried into the inguinal ring by the sound and cause sufficient injury to produce hernia, yet, not be ruptured?'"

"I told him I had never heard or read of a hernia being produced in such a manner. I have not found any report or essay suggesting such a probability as a cause of hernias; still, I do believe that it was the cause in this instance."

This problem was submitted to Dr. Benjamin H. Breakstone, of Chicago, who very kindly submitted the following reply:

"With reference to the inquiry of your correspondent, the data supplied are not sufficient for forming any definite opinion. However, from what is told, I am not satisfied that the patient has inguinal hernia at all. If the swelling is owing to injury from the bladder, he certainly should have bladder symptoms. I am satisfied that the manipulations of the bladder had nothing to do with the cause of this supposititious hernia; for, if sufficient force was employed to produce a hernia there, there undoubtedly would be severe bladder symptoms, while the bladder-wall would have been injured sufficiently to give rise to a leakage of urine, either into the abdomen or into the fascia.

"Many hernias come on in an imperceptible manner, especially in patients who are run down and weak or who suffer from asthma or cough, and then the abnormality is only accidentally discovered. Quite frequently a hernia will be produced during excitement or during physical exertion, and then is not discovered accidentally until some time later."

QUERY 6215.—"Cyanide-Poisoning." H. M., Ontario, Canada, has a patient, a young man working in a cyanide-mill, with good previous health, who for the last three months has been complaining of general malaise, furred tongue, slight constipation, and dryness of the throat. His lungs are not affected;

his heart is normal, but beats 110 per minute; his temperature registers 101 degrees. He complains of a vague pain in the chest and thighs and of general weakness of the limbs; he has lost weight. Previous venereal diseases are denied. The Doctor suspects cyanide-poisoning, but has not been able to relieve the symptoms or to arrest the trouble.

We submitted the Doctor's query to Dr. Alice Hamilton, of Chicago, who has specialized on occupational poisonings, and she kindly informs us as follows:

"The symptoms of true cyanide-poisoning are rather vague. Von Jaksch, in his work, 'Die Vergiftungen,' names itching skin, headache, weariness, slow pulse, vomiting, salivation, acute pharyngitis, albuminuria.

"But the illness of workers in cyanide-mills is more likely, I believe, to be arsenical poisoning. Both the ore and the zinc used in the extraction-process may contain arsenic as an impurity. The best article on the occurrence of arsenical poisoning among these men is by Noble Wiley Jones, in *The Journal of the American Medical Association*, 1907, vol. xlvii, page 1099."

As a first measure, it undoubtedly will be necessary for this patient to leave the cyanide-mills. If the idea should prove correct that he is really suffering from arsenical poisoning, the accepted treatment should be instituted. After recovery, he will have to engage in another occupation.

QUERY 6216.—S. B., South Carolina, asks for the "best treatment" for exophthalmic goiter.

The very best treatment for exophthalmic goiter with which I am familiar is that advocated by the late Doctor Forchheimer, of Cincinnati, as described in his book entitled "Prophylaxis and Treatment." The principal remedy employed by him is quinine hydrobromide, 5 grains taken four times daily. "Under this treatment," quoting Forchheimer, "the tachycardia improves, the pulse frequently coming down, from 130 or 140, to 80 or 90, in forty-eight hours; second, the thyroid gland diminishes in size, by measurement; thirdly, the tremor and exophthalmos are the last symptoms to leave.

Forchheimer recommends, in association with the quinine salt, ergot in some form, for its steadying effect upon the circulation. These two remedies, taken together for a considerable period—one month, two months, or more—will control a very large percentage of these cases. You understand, of course, that it will not cure them all, and occasionally

it may fail altogether, although in this writer's experience benefit usually follows in the majority of instances.

In association with the quinine treatment, Dr. Israel Bram (*N. Y. Med. Jour.*, Nov. 27, 1915) also recommends lecithin, which stimulates the resisting power of the tissues. According to that writer, this latter remedy is especially indicated when the nervous symptoms are pronounced. He asserts that it will control the tremor and excitability even more effectually than do the bromides. The only contraindication will be when it upsets the digestive function, which it is but very rarely likely to do. The diet, of course, must be well selected and generous.

In this connection, read the account of the work of Watson printed on page 605, this issue. Doctor Watson is using injections of quinine and urea hydrochloride in these cases, and with quite remarkable results.

QUERY 6217.—"Nephrolithiasis" M. W. Y., Indiana sends in a specimen of urine, a part of 3 1.2 pints passed in twenty four hours, from a man forty years old who passes gravel and blood every day. The man has been ill for five years, but discharged gravel only for a few months.

The urine is highly alkaline; there is much crystallization, and symptoms of intestinal fermentation exist. The patient probably suffers from nephrolithiasis.

In this case an x-ray examination should be made at the earliest possible time, in order to obtain more exact information on the situation of the gravel. Hexamethylenamine, 3 grains, with arbutin, 1-2 grain and ammonium benzoate 3 grains, should be given every three or four hours, and dilute nitromuriatic acid administered with meals. The intestinal fermentation should be controlled by tablets containing bilein, strychnine arsenate, pancreatin, sodium sulphocarbolate and sodium carbonate, one hour after eating.

Thorough intestinal lavage, and high enemata of decinormal salt solution should be administered every second or third night, before retiring. As soon as the fermentation is controlled, tablets of the Bulgaric bacillus are advised, three or four tablets, chewed and swallowed with a little milk, on an empty stomach, three times daily; or better still, one third of a tube of bacillus-bulgaricus bouillon, morning, noon and night.

The diet should consist of cereals, fruits (ripe or well cooked), and vegetables of an easily digestible character; eggs, skimmed milk, buttermilk; a small quantity of red

meat may be allowed daily or every other day. Veal, pork, smoked meats, smoked fish, pastry, spiced foods, rich soups, made dishes, coffee and alcoholic beverages must be prohibited.

Cases of this kind require careful study, and the treatment must be varied from time to time to meet the changing conditions. Of course, the urine should be submitted for examination periodically, and it will be well to send specimens of the gravel that is passed.

QUERY 6218.—"Marasmus?" H. C. H., Indiana, describes the case of a female child, twenty months old, whose facial expression is idiotic. It is wobbly in neck; legs the size of those of a six months infant. Bowels are regular and of good appearance; color and quantity normal. The child eats well, is not cross, sleeps well. "Looks like marasmus."

The clinical data submitted are, of course, quite insufficient to justify a definite diagnosis, or even tentative therapeutic suggestions. The case does not look like one of true marasmus, rather like one of arrested development, possibly like rickets. It would be necessary to know the family history, and to be informed whether there is any specific taint in the family. Was labor natural or instrumental? Has the mother borne healthy children? How is the child fed, and how long has this abnormal condition been observed?

It is possible that careful dieting, and the administration of Bulgarian bacillus tablets, crushed, will prove beneficial. The digestion should be facilitated by small doses of diastase and papain; and, in addition, nuclein, also lecithin, and, possibly, careful tentative treatment with thyroid substance may be of benefit. It must not be forgotten that, while the case is probably one of malnutrition, or of faulty nutrition, or at least while it is in part due to such a condition, there are many related points which should be investigated in order to clear it up.

QUERY 6219.—"Vicarious Menstruation Versus Hemoptysis." W. F. S., Texas, writes about a woman whose menses fail to show up for several times in succession, while there is hemorrhage from the thoracic region.

From the very few points presented in this communication, it is not possible to say whether or not the doctor is dealing with a case of vicarious menstruation, but we are inclined to suspect a clear case of hemoptysis

due to pulmonary tuberculosis; the cessation of the menses being, itself, the result of the tuberculous disease. If we are correct, and the amenorrhea is actually due to tuberculosis, it would be worse than useless to attempt the treatment of the failing menstruation.

When the hemorrhage occurs "from the thoracic region," emetine hydrochloride may be administered for its direct hemostatic action, and it may even exert a beneficial effect upon the tuberculous process; at least we are led to infer this possibility from correspondence with several physicians. But we confess that we cannot quite see the *modus operandi* of such an action of emetine. In hemoptysis, however, its effect is clear and undoubted.

In the case in hand, the doctor will have to examine the patient's thoracic organs for evidences of disease. In the presence of pulmonary tuberculosis, supporting treatment is, of course, indicated primarily, and then such measures of symptomatic therapy are called for as may be indicated by the individual symptoms.

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QUERY 6220.—"Obscure Affection of the Kidney." H. L. W., Wisconsin, describes the case of a young man, thin, apparently in good health except for periods of pain over the right kidney, sometimes radiating across the right side of the abdomen. Occasionally this is severe enough to cause the patient to assume the recumbent position. The pain develops at irregular periods, frequently after starting work, and has existed, intermittently, for several years. Complete uranalyses and x-ray examinations were negative in results. The affection has been held to be of rheumatic origin, and alternating hot and cold baths have given temporary relief. There is a tenderness in the right side of the spine, about one inch above the pelvis; pressure on the twelfth rib causes some pain; this rib is separated from the eleventh more widely on the right than on the left side. Strapping the right side has, previously, been of assistance. The doctor suspects inflammation in the right kidney, possibly also renal calculus. He adds that laying the patient on the face and manipulating the region, causes the pain to cease; later on it recurs, when he moves about.

In this case, it is just possible that there is a subluxation; on the other hand, the pain may be due to the presence of a small calculus in the renal pelvis. In either case the x-ray examination should be repeated and may prove informing. Displacement of the af-

fected kidney, which may or may not contain a concretion, must be thought of, particularly since the pain ceases on certain kinds of manipulation and recurs when the upright position is assumed. In view of the fact that this patient has had the advantage of the best obtainable advice in the country, we express ourselves as loth to offer more than suggestions. We should wish to know, however, the results of a complete uranalysis, repeated several times, the specimens being voided before, during and after the attacks of pain, also in painless intervals. Further, an exact examination of the abdominal organs, including the spleen and liver, may be of assistance, in spite of the fact that the pain is referred to the right side. The possibility of a tender appendix must be considered. Altogether, there are so many difficulties in the way of a "long-distance" diagnosis, that we do not dare to venture it.

On general principles the digestive process should receive attention, and free elimination be secured. Definite treatment for a case of this sort naturally is dependent upon a clear diagnosis, and we must, therefore, refrain from offering any therapeutic suggestions.

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QUERY 6221.—"Obstinate Vomiting of Children." J. W. S., North Carolina, writes about a little boy, three years old, an orphan, with good family history, who is afflicted with frequent vomiting. Water comes back ten or fifteen minutes after ingestion. There is no appetite and all food refuses to "stick." The doctor gives the white of one egg in scraped ice during the day, which is usually retained. Bowels and liver have been attended to. There does not seem to be much nausea; some fever, the temperature running from 99° to 100.5° F. The condition has existed for a year or more.

It seems hardly necessary to call attention to the fact that vomiting is one of the most frequent symptoms of disease in children and may be due to a great variety of causes. The case in point is evidently not one of cyclic vomiting. Possibly there may be an underlying disease of the nervous system. We assume that constipation coexists and that possibly the pulse is irregular. We also suspect that the temperature may be subnormal just prior to or during an attack.

In searching for the cause, it is to be remembered that autotoxemia may produce vomiting; that it may have its origin in renal disease (therefore the urine should be examined); that there is frequently acidemia;

and that there may be some irritation of the pharynx.

In some cases, vomiting arises originally from a definite cause, persists after its removal, as a habit, and the most trivial things may occasion the attack.

Holt has seen a number of children who, up to the third or fourth year, persistently vomited any solid food, no matter of what variety or how small the quantity given, although fluids could be retained.

Other possible causes for persistent vomiting may be chronic indigestion, abnormalities of the digestive tract, cerebromeningeal congestion.

This little boy should be subjected to a very careful and complete physical examination, including an investigation of all reflexes. Together with the specimen of urine that should be examined, the material vomited after feeding (preferably a mixed cereal and milk, or egg meal) should be submitted, accompanied by information as to the time of expulsion, i. e., the period which elapses between the ingestion of food and its ejection. Then it should be known what is the character of vomiting, whether it is easy or convulsive, paroxysmal, and the like. It would also be of interest to know what caused the death of this boy's parents.

In the meantime, feeding may be tried with clam bouillon, white of egg, and mucilaginous beverages, and, if necessary, by the rectal route. We should be inclined to begin at once a course of alkaline medication, providing the urine is shown to be hyperacid.

QUERY 6222.—“Hematuria.” F. R., Colorado, writes about a man, sixty-five years old, with the history of three attacks of hematuria in the last two years. The last attack was induced by a strain, the patient standing on a snow bank, trying to jump on a horse, when the snow gave way and let him down. The following day he did some heavy lifting, then he began to pass blood in the urine and has continued to do so ever since, complaining of some pain across lower part of the back and in the bladder. In this case, hypodermic injections of emetine failed to give results, also calcium chloride in full doses, and hamamelis. Our correspondent sends in a specimen of urine and requests suggestions for treatment.

The urine shows evidence of a lesion somewhere in the upper urinary tract and probably some cystitis. Naturally, the exact source of the hemorrhage should be ascertained, if at all possible.

For treatment, it will be well to administer small doses of ergotoid with arbutin and hamameloid, and plenty of barley water, made thin.

In view of the presence of many coli bacteria, a few injections of an autogenous bacterin might materially improve conditions.

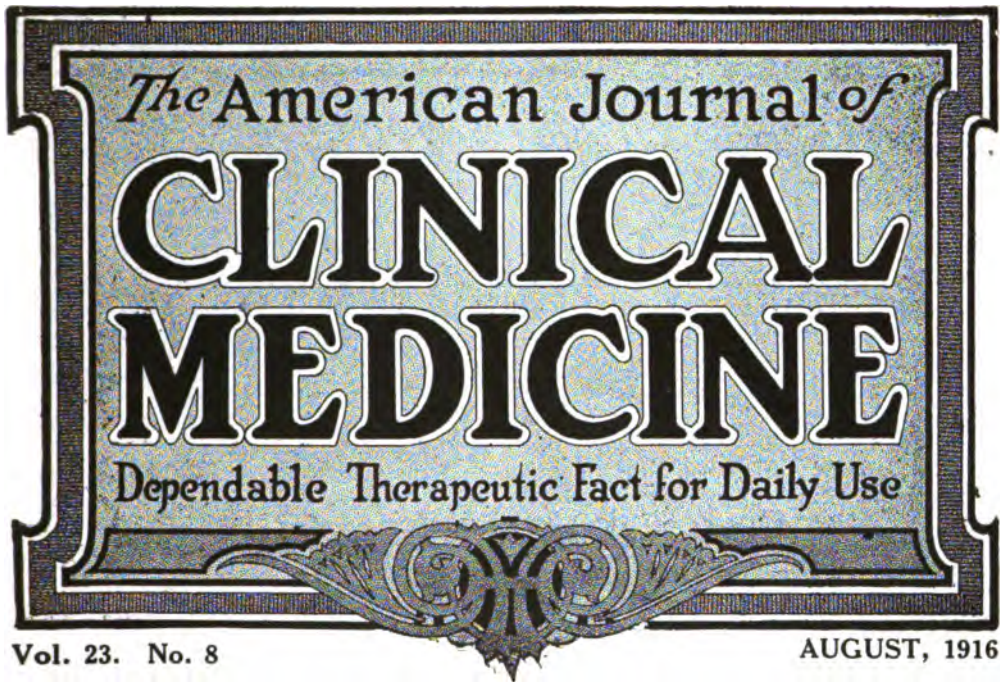
It will be well to examine the prostate of this patient and, if the condition does not improve, to make a cystoscopic examination.

QUERY 6223.—“Morphine Addiction.” G. W. S., Mississippi, writes about a patient, a widow, 70 years old, who has been a morphine habitué since the death of her husband about thirty years ago. She has declined any suggestion of treatment and is regarded as incurable. When the Harrison law passed, she managed to secure a big supply of morphine. The supply is running low, and she and her family are anxious that she have another stock-up. As the doctor interprets the revenue collector's reply to inquiry on the subject, he can prescribe what he believes necessary (stating the case to be incurable at her age), and the druggist can order it on his prescription. One of the woman's sons says he thinks she would try home treatment at the doctor's hands but nothing could induce her for a moment to think of leaving home.

The question regarding the treatment of seventy-year-old patients is not easy to answer. One of the Department rulings is that the physician shall not supply addicts with their drug unless the prescription shows a gradual decrease of quantity, although an increase may be shown in the case of an incurable disease.

It is a question, of course; whether the patient may be regarded as suffering from an incurable disease or whether the officials in that district construe the law in a common-sense way, realizing that it is practically impossible to withdraw opiates from a woman of advanced age.

The writer's experience would lead him to believe that by the time the amount of morphine was reduced to 3 or 2 grains *pro die*, conditions would be so unsatisfactory that one would hesitate to make any further reduction; in fact, by such a reduction, the patient's life might be seriously endangered. However, under no circumstances should the patient be supplied with any quantity of morphine. The safest way would be to prescribe sufficient for say two or three days, then prescribe again. To “stock her up,” would be objectionable for many reasons.



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The Summer Outing: Also the Emergency-Case

AT about this time a good many of our readers are getting ready for their annual summer vacation. Every human being wants a vacation—surcease from humdrum work. The child would like to have it twelve months in the year. But, as it grows older and loses its pristine innocence and the cares of life eat into its soul, its heart becomes encrusted with the rust and scale of selfishness and labor, until the time comes when, a grownup man, he is so encased that he no longer feels the anticipated pleasure of an outing. Then he might as well be buried, for any use he is to humanity.

It is to the man of a family especially that the summer outing commends itself. He can throw off the cares and annoyances of life for a time and revert to the unforgotten pleasures of childhood. He can get rid of the women for a few weeks; that is, if he is lucky enough to have found a place to which they are as yet unable to penetrate. Just now he probably is echoing the words of that lovely poem—written many years ago, by, I believe, Mrs. Hemans, and which begins about like this: "Tell me ye winged winds that 'round my pathway roar, is there some spot on earth where women come no more?"

To my regret, I have forgotten the rest of the poem alluded to, but, if any man is fortunate enough to know of such a place as yet unspoiled, he will go there, get rid of most of his clothes and the other accessories of civilization, and lie around to his heart's content: smoke, cuss a little if so inclined (not that he particularly wants to cuss, but he likes to realize that he may cuss if he wants to), cook—or, if he be wise, "let George do it"; and the probabilities are that he will eat like a wolf, and at the end of his allotted season come home hearty, brown, rugged, and in reasonably good temper.

However, it will not be many years before this happy creature's elysian retreat will have been invaded by the eternally feminine element of humanity and thenceforth spoiled for all practical purposes. For, while man is willing occasionally to relax his warfare and take a rest, woman will never do so willingly.

Characteristically woman, having once established herself within our entrenchment, proceeds to make herself at home and us fellows miserable. You have to wash your face, shave, put on clean linen, and even blacken your boots whenever she is around. For a while she may pretend that she will

join in our outing as a chum, and possibly do so for one short season, but by the next one she begins to smuggle in drygoods and to put them on. And, whenever one woman does this, all the rest follow suit, and each tries to outdo the best one. *We*—poor Adams—then have to up stake and hunt up another, still more remote abode.

But, let us return to our original subject. One of the first things necessary for enjoying an outing is, to cut out work. We spurn all luxury, in order to reduce the list of necessities to the smallest number of items, and these of the lightest possible nature. For some years, we have carried, in our outings, the emergency-case put up by The Abbott Laboratories, and have found it altogether the most comprehensive and satisfactory that we have ever taken. Not that we always find it in everything we happen to want. Certainly not! For, were we to take four No. 8 medicine-cases, each containing a hundred bottles, we still should find that there were one or two remedies that we required but which had not been included, besides discovering that we needed much more of one or two of the remedies than the vials hold. We determine that "next year we shall fill two or three bottles with this particular remedy," then, if we do so, we may not have need for a solitary dose of it, while, though, we have urgent need for the very things that we left out in order to make room for the extras.

No matter how small the pack one carries, it should contain a few purgative pills and a little tincture of iodine, for wounds. Also, some strychnine tablets for snake bite are very good to have. The four slim vials of the hypodermic case may contain strychnine, atropine for hemorrhages, apomorphine for producing emesis, and the H-M-C for any of the innumerable occasions that possibly may arise in which an anodyne-anesthetic combination like that will be required. Were we to add to this list only one thing more above any other, it would be tablets of potassium permanganate, for testing the purity of the drinking-water. But, as no noxious germ will withstand boiling, perhaps it is sufficient if we rely upon tea as a beverage, boiling the water thoroughly.

If one were to carry with him all of the drugs and surgical appliances that could, by any possibility, be required on a month's trip in the wilderness, he would have to have a motor truck or a two-horse wagon to convey them. This emergency-case has been studied out so well, that it is practically impossible to think of any emergency at all likely to

happen for which one will not be amply provided. The case will go into an overcoat-pocket easily. The present writer has tried it for five years, and has not had occasion to go outside of its limits for additional drugs.

The hurry of the times affects us so
In this swift, rushing hour, we crowd, and press,
And thrust each other backward, as we go,
And do not pause to lay sufficient stress
Upon that good, strong, true word, Earnestness.
In our impetuous haste, could we but know
Its full, deep meaning, its vast import, oh,
Then might we grasp the secret of success!

Ella Wheeler Wilcox—

ACUTE ANTERIOR POLIOMYELITIS

The whole country has become greatly alarmed about the epidemic of infantile paralysis now prevailing in New York City. At this writing, 1440 cases, with 287 resulting deaths, have been reported. In spite of the efforts that have been made by the municipal authorities and the United States Public Health officials, the number of cases occurring in Greater New York continues to increase, and there is some reason to fear that there may be outbreaks of the epidemic in other parts of the country. A few cases have been reported in Chicago, as also in many other sections; but their number is no greater than is common at this time of the year. There is no special cause for alarm, nevertheless it certainly is the part of wisdom to be prepared, and every physician should familiarize himself with the symptoms of epidemic poliomyelitis, so that he may be able to recognize it quickly and treat it energetically from the very start.

Anterior poliomyelitis is now known to be a contagious disease. Flexner has definitely shown that the infecting agent belongs to the group of so-called filterable viruses, and that the organism is an exceedingly minute one, although its exact nature has not yet been positively determined. The portal of entry of the virus is the upper respiratory tract, particularly the nasal cavities, which are in direct communication with the meninges, by way of the lymphatics. The first pathologic change, therefore, is an acute interstitial meningitis; but with the advance of the process the infiltration follows the vessels as they enter the anterior portion of the cord from the meninges. There is hemorrhagic exudation around these vessels, pressure on the nerve-cells, anemia of these cells, and finally degeneration.

The nasal discharges convey the organism from person to person, and Sawyer, in his

recently published study of the California epidemic of 1913, states that it also was conveyed in the rectal washings obtained from a patient fourteen days after the beginning of paralysis. The infectious substance may be carried by garments, bedding, handkerchiefs, foodstuffs, and other articles soiled with the body discharges, as well as by kissing, coughing, and sneezing, very much as is the case with other contagious diseases, such, for instance, as scarlet-fever, diphtheria, and typhoid fever. It is highly probable that the virus may also be conveyed by the bites of insects, as lice, fleas, and flies. Rosenau advanced the theory that the disease-germ was transmitted by the bite of the stable-fly, the stomoxys calcitrans, and our friend Dr. Philip A. E. Sheppard, of Boston, who officially investigated this problem for the state of Massachusetts, still is confident that this is the method of conveyance. Sheppard bases his belief, in part, on the fact that the occurrence of the disease in epidemic form frequently is concurrent with the life-incidence of this fly.

Probably more important, however, than insects or fomites, in the transmission of poliomyelitis, is the carrier—the individual who himself is suffering from the disease in a mitigated form. There is a growing belief that the so-called abortive type of poliomyelitis plays much the same part in its distribution as does the typhoid-carrier in the transmission of that disease. It is declared that from 25 to 56 percent of persons attacked by poliomyelitis suffer from this mild form, in which the symptoms are so slight as usually to go unrecognized.

Infantile paralysis is, generally speaking, a disease of the summer and fall months. In the New York epidemic of 1907, the outbreak began in July and reached its maximum in September. As a rule it disappears before the cold weather sets in, although winter epidemics have occurred. Childhood is the age of susceptibility. According to Peabody, Draper, and Dochez, whose experience is verified by that of Mueller, 96 to 97 percent of the patients are 10 years old or younger, while 89 to 90 percent are below the age of 5 years. Perhaps the age most liable to infection is the latter half of the second year. In the New York epidemic of 1907, just cited, in which 729 cases were reported, 7 of the patients were between 9 and 10 years of age, 14 between 10 and 15, 5 between 15 and 20, 1 between 20 and 25, and 2 over 25 years of age; all the remainder being very young. Wickman tells of one man 46 years of age who suffered from the disease, and in the Vermont

epidemic (reported in *Vermont Medicine*, Feb., 1916) there was one patient of 38.

There is considerable difference of opinion with regard to the length of the period of incubation, but the consensus of opinion is, that it usually varies between five and ten days, with an average of about a week.

The early symptoms are of such a general character that it is difficult to identify them as being characteristic of poliomyelitis. In some epidemics, these symptoms closely simulate those of an ordinary cold, being largely referable to the respiratory tract; while in other epidemics they are of a gastrointestinal type, beginning with gastric disturbances, vomiting, and often diarrhea. The gastrointestinal type seems to be the most common in the prevailing New York epidemic. Fever is practically always present, though generally it is slight. It very rarely exceeds 103° F., the temperature ordinarily being in the neighborhood of 99 and 99.5 degrees. Profuse sweating is mentioned by Mueller as one of the cardinal symptoms of the early stage of the attack, although this by no means is constant. Other symptoms that are quite characteristic, and of considerable diagnostic value in making an early diagnosis when there is an epidemic of poliomyelitis, are: drowsiness, nervous irritability, hyperesthesia, and pain on passive motion. Stiffness of the neck and resistance to flexion are very common. Attempts to test for the Kernig sign often cause discomfort, while pain in the head, back of the neck, back or legs often is present; in fact, pain in some form is a constant feature of acute poliomyelitis. A not uncommon forerunner of paralysis is weakness of the muscles. There may be muscular twitchings, and very rarely convulsions.

The blood-picture is of comparatively little value in making a differential diagnosis. In some cases, there is a low leukocyte count; in others this is high. More can be learned from an examination of the spinal fluid, which often exhibits a striking increase in the number of cells per cubic millimeter and sometimes an increase in the globulin content.

In the most common form of the disease, paralysis of one or more muscles appears on the first or second day after the febrile onset; still, it may be delayed for several days. "At this time," say Peabody, Draper, and Dochez, "the child may be found on its back, with thighs slightly flexed and everted in a froglike manner, and the head usually rotated to one side. The eyes are partly or wholly closed and there is a peculiar tired, wilted

expression. Not infrequently the chin is pointed upward a little, indicating a small degree of retraction. From this drowsy or almost sleeping condition, the child can be roused suddenly, often by the gentlest touch or manipulation. Very frequently, when the leg is lifted only a few inches from the bed, an expression of annoyance, rather than of distress, crosses the face, and if the leg be the paralyzed one the child often tries to free it from the examiner's hands by twisting the trunk and shoulders. This procedure is a surprisingly common one and is usually accompanied by a pettish, fretful, rather bored look and whine; but when the examiner stands back from the bed the patient lapses almost at once into the drowsy state."

In the more severe forms, the child is likely to lie on its side, with the head drawn back, the thighs flexed, and occasionally there is true opisthotonos. As a rule, all these patients have what is described as a "drowsy, wilted look," although rarely they may be brighteyed and present an anxious, apprehensive, rather frightened expression. They are practically always afraid to be touched and cry out on the approach of the nurse or the doctor.

The paralysis is most likely to attack the lower extremities. In 808 cases reported by Wickman, the paralysis was limited to the legs in 43.69 percent; one or both legs were affected in 85.64 percent. The paralysis does not necessarily present an unfavorable prognosis, since about 44 percent recover the use of the affected members, while many of the remainder are only slightly disabled. Recovery is more likely to occur in older patients.

The mortality, as a rule, varies between 10 and 20 percent. In the present New York epidemic it has been high, approximately 20 percent or more. When death occurs, it results from paralysis of respiration. It has been observed by Peabody and his associates that in fatal cases the patients are very ill for the first two or three days. In a series which they report, *all those who died had paralysis of one or both deltoid muscles, thus indicating inflammation of the cervical cord.* The extreme prostration and the upper-extremity paralysis, unless the attack was of the rapidly ascendent type, were the only tangible diagnostic features. Another interesting feature of these fatal cases has been the transformation in the mental character of the patients just shortly prior to death. (See the department of What Others Are Doing, of this issue.)

In the efforts to control the spread of infantile paralysis, much emphasis is laid upon the fact that the disease is conveyed mainly by the discharges from the nose and rectum. The virus is undoubtedly present in the nasal discharge during the prodromal stage and possibly during the stage of incubation, and it is readily destroyed by hydrogen peroxide, even in 2-percent solution (stronger solutions are better), used as an irrigant for mouth and throat in persons exposed to the disease. Carbolic acid seems to be only feebly germicidal for this organism. The new antiseptic, Chlorazine, should be ideal. Of course, special attention should be paid to the nose and throat in any person suffering from the disease, care being taken to prevent soiled garments, bedding, handkerchiefs, dishes, eating-utensils, and other objects from coming in contact with uninfected persons. The stools should be sterilized with exactly the same care employed in the case of patients suffering from typhoid fever. Children who are exposed to the disease should be kept out of school for at least two weeks, and away from places of amusement where they will come in contact with other children. Complete isolation of the sick should be insisted upon.

Special attention should be given to the so-called abortive cases, that is, to individuals, old or young, who are suffering from obscure ailments of any kind during an epidemic of infantile paralysis. Any child, or older person for that matter, who is feverish, complains of drowsiness, and shows nervous irritability may be undergoing such an attack and should be quarantined until all danger has passed.

The treatment of acute anterior poliomyelitis is, on the whole, unsatisfactory. Hexamethylenamine is recommended by Cushing and Crowe, in the belief that, being excreted in the spinal fluid, it would act as an antiseptic at this point and prevent further infection. Since this recommendation first was made, it has been pointed out that hexamethylenamine is active only in an acid medium, and, since the spinal fluid is alkaline, it consequently is thought to be of very little value. However, a number have reported experience with this remedy, and in some instances the results seem to have been good. Immune serums have also been tried, but with little success. We have much faith in calcium sulphide, and calx iodata has been suggested. Southwick, in a paper published in *CLINICAL MEDICINE* (June, 1913, p. 482) reported his treatment of 10 cases, in 4 of which the patients recovered

completely from the paralysis and all of whom have slowly improved, with the exception of one, a tuberculous child.

In view of the excellent results obtained, Southwick's method of treatment seems a good one. It is as follows:

"First of all, thorough elimination was inaugurated by means of calomel and podophyllin; then followed saturation with calcium sulphide. After the acute symptoms had subsided, small doses of strychnine arsenate were persistently given, besides such other medicines as seemed indicated for special reasons. Pillows were placed so as to support the affected foot and leg in the most comfortable position. Once a day the child was sponged with a creolinated epsom-salt solution. Three times a day the nose and throat were sprayed with a 50-percent solution of hydrogen peroxide. Seeing no particular indication for urotropin [hexamethylenamine] and never having heard of its use doing good, I did not give it. Morning and night the back and legs were rubbed with warm coconut- or olive-oil, the paralyzed leg being gently massaged and subjected to passive movements. (This after all fever had left.) After the morning bath and massage, the children were placed upon a blanket on the floor, given pillows and their playthings, and were left to their own devices. Without an exception, the gentle rubbing of the back with oil and the massage of the limbs gave comfort, although at first they dreaded it."

Very little can be added to this excellent outline, but it should be remembered that a favorable outcome depends on *right* treatment given *early*; and we can not accomplish much after paralysis has set in. It is of the utmost importance that any suspicious symptoms in any child should be scrutinized carefully when infantile paralysis is about. In every such case clear the bowel quickly with small doses of calomel followed by saline draughts; maintain intestinal cleanliness with the sulphocarbolates, and nasopharyngeal antiseptics with nonirritant antiseptics, and push calcium sulphide to saturation; calx iodata may help; fever calls for aconitine or gelseminine, and nuclein is a vitalizing agent of great value. Cr  d  's silver-ointment, well rubbed in, is often helpful, while the epsom-salt baths may be given twice daily. Absolute quiet is imperative during the acute stage, and painful parts should be protected and possibly immobilized.

The treatment of the paralyzed member, and the ingenious surgical expedients in the

way of tendon transplantation for the relief of deformity, we shall not try to discuss at this time.

We shall welcome the widest possible discussion of this disease. The problem is one of vital interest. Tell us your experience.

Perhaps the best system of diet is to take a little of everything—not too little, nor yet too much—omitting all those foods which experience has shown us to be harmful. And almost everything has its use.

—Edwin F. Bowers.

INDIVIDUAL ENTERPRISES

In Europe, it is not uncommon for men to devote themselves to the cultivation and study of a single plant. This is generally done as a side issue, so that the butler who waits upon you at the table or the tailor who so beautifully restores a damaged garment may at the same time be the highest living authority on the empress narcissus or the cactus dahlia.

Work of this kind seems to commend itself to those of our profession who, through the advance of years, the accumulation of means or the sharp competition of the younger graduates, may have spare time at their disposal. One might, as we have frequently remarked, take up the cultivation of some one drug-plant, choosing, preferably, one which is native to the region where he lives; or—and here is an enormous field lying open to the investigator—one might take up some one of the native plants that thus far has not been studied, and enlighten medicine and the world at large as to its properties and possible applications.

Of the thousands of different species and varieties of native plants, comparatively few have really been studied. While not long ago visiting a town in Central Illinois, I observed with much interest the beautiful horse-chestnut trees along the street; I also saw that the sidewalks were covered with the fallen fruits, while all the trees were laden with them.

I never wholly ridded myself of early teachings, and one of the thoughts instilled into my early life was, the belief that the Creator of this world did nothing in vain. Hence, there must be a use for everything created, although to discover that use might call for considerable study. But, then, there is the Osage orange, with its strange fruit like coarse green oranges. And who, the thought came to me, can tell of any use for the abundant fruits of the Osage orange?

Upon my return to the city, I looked the matter up—first in Lloyd's—and found that the tree is known to attain a height of sixty feet, also, that the wood was formerly employed by the Indians for making bows that in toughness and elasticity approached the famous English yew. The fruit of the tree was used for dyeing yellow, after the pulp first had been removed. This is all the information Lloyd could afford, and that comes under the head of coloring-matters. That fine work, the "New American Therapeutics," by Ellingwood, makes no mention of the plant.

Now, we have these considerations to begin with: Take for instance this fruit, which is not being utilized in any manner. If it were possible, it would have been used as a food, for everything eatable has been or is being eaten. Even the acorn, while somewhat neglected at present, was the staple food of at least one race in antiquity, and has found renewed favor in Germany and Austria since the blockade pinch.

This Osage orange as an article of food seems an impossibility. We may assume that the reason why it has not been utilized as a food is, the presence of some unpleasant or dangerous principle. But an unpleasant or dangerous principle is a medicinal one. It is unpleasant or dangerous, because it acts upon some function of the human economy; therefore, it is up to us to find what principle is present and in what ways it acts upon the human body. Then we can utilize it when such an action is required.

Here is an opportunity for somebody who has the leisure, and the desire to occupy his spare hours with a useful and possibly remunerative avocation. Let him study this plant; find in what portion of the plant the greatest activity resides; what is the best means of extracting that activity; and isolate, if possible, the active principles.

All this is, by no means, a difficult task for anyone who is willing to brush up his long-forgotten chemistry, renew it, and possibly take a few lessons from some competent teacher on the methods of accomplishing the tasks which I here have outlined. Then the clinical applications will be easy; and when one has prepared a sufficient quantity of the remedy he can easily find among his brother physicians those who would assist in making these observations.

Who is there among our many thousands of readers who would like to take the opportunity of adding a new agent to our *materia medica*? One need not be afraid of overdoing

this matter. While we have very many more weapons in our arsenal than any one physician ever uses or can possibly use, if we come to study the physiology of the body and ask ourselves what we possess in the way of remedies to elevate or depress each of the innumerable functions of that body, we shall find in many instances that no remedy has been developed.

There is no reason why we should not do this work. It is a useful work; and nobody can tell until we are started how many treasures lie within our reach, but as yet undiscovered. We may thus utilize native plant remedies until the war passes and Germany gets ready to furnish us again with her chemicals. (Nota bene: This last remark was penned before that U-boat slipped in under the watchfully waiting British armada. Nevertheless, my argument still holds good.)

Better is it to have a small portion of good sense, with humility and a slender understanding, than great treasures of science, with vain self-complacency.

Thomas A. Kempis

THE NEWER DIAGNOSIS

Doctor Slattery, in a recent number of *American Medicine*, contributes an excellent article describing some of the newer methods of diagnosticating, and he speaks rather discouragingly of the old physician, whose diagnosis was always a guess. However, he might well have complimented that oldtime doctor upon the frequency with which his guess proved correct.

The whole art of diagnosis has been called in question by men who, judging simply from autopsies, have failed to reflect that these represented but a very small proportion of the physician's work. Consisting only of the cases in which therapeutics had failed, it was not to be wondered at that the diagnoses also turned out, in a large proportion of the cases posted, to have been incorrect. But, if a man during the period of his existence goes through ninety-nine illnesses and finally dies, he may safely credit the physician with ninety-nine percent of correct diagnoses—and that, in all conscience, is near enough to perfection.

It is true that with a clinical thermometer we can tell exactly what is the fever-temperature, but the older physician without the aid of this modern instrument could come within an eighth of a degree of it with almost invariable certainty. So, also, we may take the tension of the pulse by instrumental measures, but this does not teach us any more

than any expert clinician formerly ascertained by feeling the pulse. Just as the watch and clock have succeeded the methods of telling time that were employed before these machines became so common, so we today resort to—and will continue to do so—these methods of precision.

Doctor Slattery goes on to enumerate a number of the striking advantages of the new methods of precision, as follows:

Through the use of a mechanical instrument, the need of a dose of atropine was indicated; and this cured what was supposed to be a long-standing heart-block.

The same instrument discovered in a man, who had no clinical cardiac symptoms, an auricular flutter, whereupon the ailment was cured by giving digitalin.

A laboratory-man, by examining a specimen of blood, discovered nephritis in an early stage in a man who exhibited no clinical symptoms.

A blood examination helped to diagnose a diabetes, when the urinary tests failed to disclose any sign of it.

A case of rheumatism examined culturally for organisms showed excess of uric acid, and colchicine effected a cure.

A man having a specimen of his blood is able to describe the respiration of a patient whom he has never seen.

By a response of the skin to an injection, there can be told as to whether an infant has, or ever is likely to have, diphtheria.

The foregoing might be amplified almost endlessly. In fact, the art of diagnosis has made such enormous progress of late, that we may look for the time, not so remote, when medical men, not satisfied with finding out what ails a person, will try to discover how they can cure their patient. And in this we doctors shall have the hearty concurrence of the public, for every man is far more interested in his recovery than he is in the correct diagnosis of his complaint.

In truth, it speaks well for the older physicians that, with all their crude primitive methods of diagnosis, the proportion of their cures has been as great as it was. The fact of the matter is, the imperfections of the older methods of diagnosis depended primarily upon ignorance of physiology. Were we as thoroughly versed as we should be in the functions of the living human body, if we knew as much about our own physiology as we do of our own anatomy, it would, by no means, be difficult to recognize deviations from the normal standard of operations or functions; and it is simply a question of

learning and experience to detect the cause of such deviations.

The profession seems to have taken these methods with that completeness that characterizes us as a body. If a method seems to disappoint our exaggerated conceptions of its possibilities, we drop it like the proverbial hot poker. Sooner or later, however, the profession must return to the rational method of treating disease, that of applying our knowledge of physiology, recognizing its derangements and the cause of such derangements.

We shall never do without the modern methods described by Slattery, but we shall unite them to the older ones, and the result will be, a better race of doctors than existed in the olden times or than has been produced up to the present. As it is, I should accept the verdict of a really experienced physician of the older class before I should that of a youngster, newly introduced from the laboratory and as yet without the experience which is absolutely necessary to translate his findings into substantial truths. In the same way, I should prefer a thorough therapist who knows drugs, rather than the most skillful surgeon who ever sawed off a leg.

To talk of charity beginning at home, is only another way of letting people know that we are stingy.

SYSTEMIC INFECTIONS ORIGINATING FROM THE ORAL CAVITY

We are accustomed to speak complacently of the tremendous strides with which we advance along all lines of human endeavor. In electricity, in industrial chemistry, in the natural sciences generally, increasing knowledge has placed us in possession of advantages and benefits that our fathers had believed impossible, even if they could have imagined them in their wildest flights of fancy. Except for the older members of the profession, physicians hardly can realize what this same progress has meant to medicine. It is not yet a lifetime since the bacterial origin of many of the diseases was pointed out by Pasteur and proved by Koch and others, and since the treatment of these diseases, thus placed upon an etiological or causal basis, has become far more successful than it had ever been before.

We find it difficult today to picture to ourselves what difficulties were encountered by those pioneer investigators to whom we owe the science of bacteriology and its daughter science immunology; how new modes of

study and of research had to be devised; how the very form of question that had to be answered had to be discovered from step to step; how the therapeutic deductions had to be drawn tentatively—empirically, in fact—until with increasing information the benefits of all this patient and difficult research now accrues to our patients, in all branches of surgery and of medicine.

Even though the fact that certain micro-organisms could, and did, produce certain diseases was fully understood, the modes and other conditions of infection were not clearly appreciated for a long time, and it is only within recent years that one of the most important modes of infection has become understood in all its bearings and in its far-reaching consequences; namely: the localization of bacteria in the mouth-cavity, to which numerous and varied disease-processes have been traced. It is true that Miller had pointed out as long ago as 1889 that mouth infections may cause constitutional diseases, but this was believed to be rare, and, moreover, septic foci in the mouth and tonsils as well as in other cavities immediately accessible from outside were usually overlooked, while secondary diseases were accepted as primary ones, when, in fact, they followed upon the primary focal infections in their localizations.

The principal mode of infection, for virtually all systemic infectious diseases, was held to be by inhalation or by ingestion, and, very naturally, also, the direct infection through wounds and abraded surfaces was understood; it was not realized, though, to how great an extent infection-foci in the oral cavity might be responsible for disease in distant organs. However, increasing knowledge and improved methods of diagnosis have proved the frequency of small chronic septic foci in the mouth and tonsils. The newness of the subject resides, as is pointed out by Dr. Judson Daland (*N. Y. Med. Jour.*, 1916, p. 1159) in the fact that small chronic septic foci are a common cause of more or less serious—acute, chronic or recurring—systemic diseases.

It was realized only a few years ago that one of the commonest constitutional diseases secondary to focal infection is rheumatic fever, or polyarticular rheumatism—better named septic polyarthritis—and this focus is most frequently situated in the mouth or the tonsils. The conception that an abscess around an ingrowing toe-nail may produce endocarditis; or that an abscess situated anywhere may cause paroxysms of chills,

fever, and sweat; or that a gonorrheal prostatitis may give rise to arthritis, has long been recognized; but that a small abscess around the root of a tooth or in and around a tonsil can cause acute recurring or chronic disease of the joints, bones, periarticular structures, muscles, heart, vessels or kidneys, and give rise to ulceration of the stomach, duodenum, gall-bladder, appendix, thyroid gland, pancreas, ovary or meninges, is knowledge of more recent date.

It is, therefore, obvious that the prompt diagnosis and removal of a septic focus, wherever situated, is of the greatest importance, and this is particularly true of the foci of pyorrhea alveolaris, which have been amply shown to be either the direct or indirect source of many affections involving distant organs, the etiology of which many times was very obscure.

The connection of certain cases of polyarthritis with bacterial infection localized in the tonsils was followed by a revival of the former "slaughter of the tonsil," and not without justice. The relation of pyorrheal lesions to similar and to many other systemic diseases was recognized recently. The therapeutic procedures based upon this etiological conception have already passed through numerous and varied vicissitudes, from Wright's vaccine-treatment and from destructive surgery, through the list, to the present specific treatment by means of emetine, which latter has been found to be the most effective.

Some months ago, the extreme position of many English physicians, of condemning to ruthless sacrifice all dentures of patients in whom pyorrhea had been diagnosed was criticized in the *London Lancet*. American dentists have long ago learned to treat this obstinate condition with painstaking care, and have saved countless teeth that would have been lost had not rigorous cleanliness been insisted upon by them. It is, however, only since the antientamebic action of emetine has been fully recognized that a truly etiological or causal treatment of this widely prevalent disease has become possible and that we are in a position to prevent the many secondary affections that may be traced to it.

In dealing with Riggs' disease, it must not be forgotten that all open lesions in the buccal cavity soon become subject to secondary infections and that the ulcers and abscess-cavities usually are harboring various pathogenic germs, more particularly staphylococci and streptococci. It is these coexisting infections which, more particularly, may find

secondary localizations in joints and other places and thereby give rise to protracted and obstinate diseases.

The most important prophylactic factor against pyorrhea is scrupulous cleanliness of the teeth and gums, a periodical examination by a careful dentist, the routine use of ipecac powder for cleansing purposes, and administration of emetine whenever indicated, in order to destroy all foci in which the *entamoeba alveolaris* has found entrance.

One can begin so many things with a new person—even begin to be a better man.—George Eliot.

RED-CROSS APPEAL TO THE AMERICAN PEOPLE

The following appeal has been sent out by former President William H. Taft in behalf of the relief-work necessitated by the Mexican situation:

With the calling of many thousand men into military service, new and heavy responsibilities fall upon the Red Cross, in its relation to the army and navy on the one hand and to the people of the United States on the other. At present, these responsibilities are: first, to provide assistance to the medical service of the armed forces of the government, by the organization of base hospitals, ambulance columns, and other units for the care of our sick and wounded; second, to purchase, collect, forward, and distribute supplies for our soldiers in field, camp, and hospital; third, to help soldiers' families left destitute and not provided for by other agencies.

For the necessary means to discharge this patriotic service, the Red Cross, in accordance with its custom, turns to the public, whose sympathy and generosity it has learned implicitly to trust. Upon the response to this appeal must depend the adequacy with which the Red Cross will be enabled to help our sick and wounded soldiers, to soften the harshness of field-service, and to meet urgent needs among dependents at home.

In anticipation of such a grave emergency as this, the Red Cross has been building up an organization competent to meet the obligations of its national charter and to make effective the generosity of a patriotic people.

Contributions may be sent to the treasurer of a local chapter, or checks may be made payable to the American Red Cross and sent to national headquarters in Washington.

WM. H. TAFT,
*Chairman, Central Committee,
American Red Cross.*

We are informed that the Red Cross will collect, forward and distribute suitable articles for the soldiers in the camps. These supplies, however, can not be accepted for delivery to any specified persons, but, if at all, only for designated companies or regiments. Packages intended for individuals should be sent through the parcels post or express services. Supplies accepted for ship-

ment by the Red Cross should fall within the following approved list: Reading-matter, games, comfort-bags, pajamas, cotton socks (medium weight, large sizes), towels, pipes, smoking-tobacco, cigarettes, chewing-gum, chocolate in tin boxes, hard candies, George Washington coffee, evaporated cream, canned fruits and other delicacies in tins, and electric fans for hospitals. Perishable or bulky articles and articles of food and drink that are harmful will not be accepted for transmission.

In addition to this service, the Red Cross is making arrangements to establish base-hospital units, which will be turned over to the War Office, if war should be declared, and will also participate in organizing relief-work for the families of soldiers. Particulars concerning the various activities of the Red Cross can always be obtained from officers of the local chapters and through the newspapers; however, our present object is, to direct attention to this meritorious and important work.

A REMARKABLE NONTOXIC ANTISEPTIC

Undoubtedly every reader of CLINICAL MEDICINE will recall the articles that appeared in these pages some months ago describing the results of the investigations conducted by Dakin and Carrel in the army hospitals in France with various antiseptic substances, and which, it appears, culminated in the discovery that in the solution resulting from combining chlorinated lime and sodium carbonate (Labarraque's solution) with boric acid they had found one of the most effective as well as innocuous local antiseptics available. These investigations were carried on in the laboratories at Compiègne, supported by the Rockefeller Institute for Medical Research, where particular attention has been devoted to the study of antiseptics.

In one of the first reports made by Doctor Dakin, printed in *The British Medical Journal*, August 28, 1915, he suggested the possibility of utilizing certain synthetic substances the action of which is similar to that of the hypochlorites, but which are more powerfully antiseptic. He particularly mentioned paratoluene-sodium-sulphochloramide, which, as he pointed out at that time, has the very distinct advantage over the hypochlorites of being stable, both in solid form and in solution, and capable of being produced at relatively low cost.

In a later communication upon this subject, Dakin, working in collaboration with

Cohen and Kenyon (*British Med. Jour.*, Jan. 29, 1916), reports their experiences with this substance, which, it now seems, presents advantages over other antiseptics of such startling character as to make it highly probable that para-toluene-sodium-sulphochloramide will eventually replace, at least very largely, many antiseptics at present in common use.

This "hyphenated" substance has already been naturalized in Great Britain under two abbreviated names, namely, "chloramine T" and "tolamine." Under these names it is being marketed by large British pharmaceutical houses. Doctor Dakin, in his writings, uses the term chloramine; but, unfortunately, this name is extremely unsatisfactory, since it already has been adopted by an American manufacturer for another, quite different, product. In this connection we may state that an American firm—The Abbott Laboratories—has recently begun manufacturing this synthetic substance and is putting it on the market under the name of chlorazene.

Whatever its name, however, chlorazene or chloramine—as you may prefer—this new preparation is certainly a remarkable antiseptic. It combines powerful germicidal action with virtual nontoxicity. Also, Dakin declares that it "has no corrosive action, even in concentrated solution"; also that "it neither precipitates nor coagulates proteins, such as blood-serum—a property of greatest practical importance in the treatment of infected wounds." Moreover, we are informed that "guinea-pigs and rabbits tolerate as much as 1 Gram per kilo-weight, administered subcutaneously, without producing any symptoms other than the moderate local reaction resulting from the injection of a strong solution."

The germicidal action of this substance is "intense," once more to quote Doctor Dakin, who declares that the bactericidal action of one molecule of this chloramine is about four times as great as that of a molecule of sodium hypochlorite; while, "in addition, it is much less irritating than the latter substance and may be used safely at a concentration five to ten times as great."

Tests made with this new antiseptic upon several of the common organisms have demonstrated that chloramine is 2000 times as germicidal as phenol in aqueous solution, and 30 times as germicidal in blood-serum. Streptococci, it has been found, are killed in an aqueous solution of 1 : 1,000,000, while in blood-serum it destroys them in a dilution of 1 : 2500.

Clinical experience, of which there is now an abundance, thanks to the work of Doctor Dakin and his medical associates in the English military and naval service, has apparently demonstrated that this substance is effective under the severest tests.

Following, we reprint a brief outline of some of the experiences with this preparation, as published in *The British Medical Journal* for January 29, 1916.

"First of all, a series of fresh but badly infected shell wounds containing dirt, clothing, and shell fragments was studied. The wounds were exposed, cleaned mechanically in the usual fashion, and lightly packed with gauze, leaving a narrow rubber tube or tubes passing to the bottom or recesses of the wounds. By means of these tubes, 10 to 15 Cc. of a 3- to 4-percent solution of chloramine was squirted at frequent intervals into the wounds by means of a glass syringe, so as to moisten the whole surface of the cavity. The results were clinically similar to those observed, in the early treatment of infected wounds, with sodium hypochlorite, with the exception that sloughs are dissolved somewhat more rapidly by the hypochlorite than by the chloramine. The majority of these wounds, though undoubtedly infected at the start, could be rendered aseptic after three to five days when treatment was commenced early. The wounds so treated were severe cases, including a number of fractures of the femur and humerus.

"But the properties of chloramine seemed to indicate that it might find a more valuable application in cases where the more generally used antiseptics were either too irritating or too feeble. Accordingly, it was used in a large number of cases of jaw and mouth injuries, which are so apt to become extremely foul. Chloramine was used in 1- to 2-percent solution as a mouth wash, and a 2-percent solution was also squirted into the external wound cavities through short rubber tubes lightly surrounded by gauze packing. The results were very encouraging. Some of these cases have been described by Surgeon Fisher, R. N., of H. M. H. S. Rewa, in a recent issue of this journal. As an antiseptic mouth-wash, 1- to 2-percent chloramine has been found to be of value in a variety of septic mouth cases.

"In addition, chloramine, at 0.5 percent, has been used for the irrigation of bladder and uterus in septic cases, and the results are stated to be encouraging. A few cases of chronic urethral infections, which had been unsuccessfully treated with silver prepara-

tions, did well with injections of 1 to 2 ounces of chloramine [solution] four times daily, beginning at 0.5 percent strength and then increasing later to 1.5 to 2 percent.

"A practical point which may prove to be of value is the fact that gauze may be readily impregnated with large quantities of chloramin. It is possible, for example, to get as much as 10 Grams of chloramine into a four-fold roll of gauze of 1 yard by 4 inches. The use of this impregnated gauze for packing infected wounds is being investigated at the present time by Sir Berkeley Moynihan. There are very few substances of high antiseptic value which can be successfully used for impregnating gauze. Chloramine-gauze obviously should not be moistened before use, or the antiseptic will dissolve out. It can be used dry for lightly packing, and subsequently moistened, if necessary, when in position."

This new antiseptic is attracting more attention in England than any remedy introduced since the beginning of the war. A number of articles have appeared in *The British Medical Journal*, *The Lancet*, and other publications, and these journals have discussed its merits and its possibilities editorially. While the Britisher is notoriously conservative, there is plainly a very general feeling that the ideal antiseptic has been found, although, of course, this belief is not unanimous. For instance, Emery questions the extreme value claimed for the chlorine-carrying antiseptics by its warmest advocates.

During the last few years, many surgeons in this country and elsewhere have expressed the opinion that the day of antiseptics had gone by and that the present need was for asepsis. They had been led to this opinion, because every antiseptic of acknowledged germicidal power had heretofore been found to be irritating, caustic, and prone to destroy the sensitive tissues so essential for rapid wound repair.

The great war has taught the surgeons who are battling with disease on the blood-soaked and bacteria-infected fields of France the fact that antiseptics still are absolutely essential, and likewise has brought home to them the importance of finding some substance capable of destroying bacteria in infected wounds without impairing the vitality of the tissues.

Chlorazene promises to be the remedy for which these surgeons—as well as the surgeons all over the world—have been looking; and it is a source of pride and satisfaction to us that a great American institution, The Rocke-

feller Institute, through its representatives at the battle front, was instrumental in developing this product. We also have a feeling of pride in the fact that an American pharmaceutical manufacturing house has been able to produce this substance so promptly, and to offer it to the medical profession of America for further and more exhaustive tests. But its values are still "in the lap of the gods." Much clinical work still remains to be done by American physicians to determine its limitations and establish its exact utilities.

If we will do for our children one half as much as we wish our parents had done for us, the rising generation will have abundant reason for gratitude.

THE INFLUENCE OF JOY

Odd, how we are still influenced by the early Puritan settlers of our country. Driven to seek new homes, because in their native land they could not follow freely the grim religious tenets which to them were truth, their views of life were not rendered more joyful by the hardships, dangers, and tribulations that were their fate in the new world. The stern, unyielding New England character, with all its sterling qualities, but too often blighted by a refusal to see the beauties of life, has come down to us, and insists upon deferring to the *seriousness* of life. And, yet, deep down in our hearts there are different points of view. Many of us can never give up being "kids"; the spontaneous enjoyment and the joy of living peculiar to childhood is yielded under protest; and, somehow, we cannot see why we should become curmudgeons, merely because we have grown up and have to find the "spondulics" to pay the landlord and the grocer and butcher and baker and to provide clothes for the missis and the kiddies, not to mention our own tobacco and cigars.

Combined with the hurry and stress of life, a gloomy, misanthropic philosophy is not conducive to happiness—or to health, for that matter—and we rebel against existing conditions, without knowing just how to remedy them. And, why, indeed, *should* we be miserable? Life is not. Nature is not. All flowers, all plants, everything in nature turns to the light, to the sun; everything is glad, as glad as can be, and the worst storm can blight the gladness only for a time; for, the joy of life breaks forth again exuberantly as soon as the storm has passed.

A rebellion against the miserable gospel of unhappiness was attempted, more or less blindly, by the so-called New-Thought move-

ment. It was supported by such publications as "The Physiology of Faith and Fear on the Mind in Health and Disease," "Worry the Disease of the Age," "Why Worry," and others of that kind. Even in far older books is the superiority of joy and happiness over killjoy influences emphasized. "Mirth," quotes Robert Burton, in his famous "Anatomy of Melancholy," "purgeth the blood, confirms health, causeth a fresh, pleasing, and fine colour, prorogues life, whets the wit, makes the body young, lively, and fit for any manner of employment."

Of late, the influence of mental conditions over the physical and physiological processes has found a deep and enthusiastic student in the Russian physiologist Professor Pavlov—who died recently, all too soon. Pavlov found many followers, thanks to whom our philosophy of life may soon be lifted to its proper plane, that of the reasonable and wholesome attitude of cheerfulness and of contentment.

The study of the emotions has been undertaken, in our own country, among others, by Professor G. Van Ness Dearborn, whose interesting book entitled "The Influence of Joy" is announced in this number of CLINICAL MEDICINE.

Between an empty pocket and an empty head, the majority of mankind would make choice of the latter.

THE MELTING-POT AND OTHER POLITICAL REFLECTIONS

In Chicago, the work goes bravely on, of working over into good Americans the raw material drawn from effete old Europe. One may judge, perhaps, of this work by the names enumerated below; this list comprising one week's prosecutions instituted by the Board of Health of Chicago for violations of the food-law. This list of names challenges attention; viz.: Jurowski, Montag, Togrsky, Piller, Abel, Trebolos, Erodes, Bolin, Tonashewski, Pitassi, Kiss, Madajczyk, Norwizki, Katlan, Kofzminsky, Silverman, Anaston, Abrahamson, Roysik, Bekata, Ostringer, Chologenko, Wirtz, Dobrzanski, Catca, Wertheimer. Beside the foregoing, we find in that lot of law-violators the names of William Powers, Patrick J. Prendergast, Louis Simon. These latter three ought to be ashamed of themselves for not having set a better example to the newcomers to America that were arraigned with them. How can we expect these recent immigrants to observe the laws of health, when those who ought to know better

are arraigned with them for breaking the same laws?

This presentation will give some indications of the cosmopolitan population of Chicago. But, make no mistake: While these men and women have been gathered from all corners of Europe, their children are all good Americans. It is interesting to the ethnologist to observe how they all fuse into one general stock. There is no distinguishing characteristic of any race that goes to form an element of our population but what is quickly acquired and manifested by the children of the other races as well. Incidentally, it may be remarked that, with all the newspaper abuse so liberally showered upon him and upon everybody else who has dared to favor the present administration of the city, Health Officer Robertson is proving the most active and useful incumbent of that office it has had since the days of Frank Reilly. Every department and every one in the health-office has been energized and benefited by the work of this remarkable man. Nevertheless, while criticism has been made of his asserted methods and alleged abuse of political patronage, nothing has been advanced against his efficiency as health-commissioner. And that is what the citizens of Chicago are mainly interested in.

Some of the Chicago newspapers at times expressed surprise that Carter Harrison should be four times elected mayor of Chicago, in spite of the abuse he received. Nevertheless, it is certainly significant that when he was last elected, after having been in the limelight for so many years, through so many political campaigns, the meanest thing his opponents could find to say against him was, that he had "moved to southern California to live"! This in itself does not seem to be such an unpardonable sin, but, it was the only thing the politicians opposing Harrison could find to stir up opposition over. It is very easy to criticize and to find fault generally, but, when one comes down to facts and can find nothing else to fuss over, a man in that position can well afford to take the abuse given him philosophically.

Just now a good deal is being said about the discharge of a number of teachers from the public schools. As a rule, people holding a job do not like to lose it. They generally get to believe that they have a personal ownership in the job and feel as aggrieved, if it be taken from them, as they would in having their pocket picked or their house robbed. However, it would be remarkable if any teacher were not the better for judicious pruning, an

dead wood is especially prone to grow on the political evergreen. An upheaval such as this usually is necessary, in order to establish new ideas, new methods, and advances in general.

Perhaps if the shams of society did not hedge us round with barriers which seem impassable to our shame, and curb some of the most honest and generous feelings of our hearts, there might be better men and women in the world for the pulling down of a little conventionality. How often does some noble impulse die in the birth, because it is not the custom to show that we feel it, and Mrs. Grundy, with her satin petticoats covering her festering sores, would gather them more closely around her, when she heard of the solecism we had committed.—*Florence Marryat.*

THE LAST TRENCH SURRENDERED

Thanks to the discrimination of our lawgivers, the innumerable swarms of folks who want to be doctors, without learning how, are granted nearly all the rights and privileges pertaining to our guild. Chiropractors, Osteopaths, Christian Scientists, and the rest of the gang, may do almost anything they like; but the legislators firmly refuse to them the privilege of employing drugs. In only one direction, is there an effort made to encroach on us in this respect, and that is the concerted movement of organized pharmacy to detach us from the privilege of dispensing our drugs. If successful, this would be a deathblow to the practice of medicine, for it would place us completely at the mercy of dangerous competitors. The druggist himself prescribes and dispenses drugs.

This being the condition of affairs, we may ask, How do the prominent men and institutions in our profession seek to protect us in this last and most important privilege? The answer is easy: They don't.

Instead of holding tenaciously to our last remaining privilege, Johns Hopkins abolishes its chair of therapeutics. Coming out flatly in explanation, that, "as all cases come eventually to the surgeon, we might as well skip the intervening processes and let them go to the surgeon at once"! Then they proceed to meet the wishes of the druggist over half way, by mentioning that, "if anybody really cares to investigate therapeutics, he is referred to the department of pharmacy of the institution."

We welcome the movement. It indicates that the tide surging against therapeutics and internal medicine in general has reached its termination. From the extreme point of its swing, the pendulum must return.

For our part, we have always believed that it is better to cure a diseased organ than to

extirpate it. Also, that, if drugs influence the vital functions in any way, we should learn to apply that influence usefully. Moreover, we have believed that it is essential that the physician should have the privilege of dispensing his own drugs, as in that manner he can obtain a personal familiarity with them and learn to judge of quality in a way that he cannot possibly do if he simply writes prescriptions, which go to any pharmacy that happens to be favored by the patient.

It is true that the pharmacists have gone to great lengths to compel the physician to do this latter thing, and in some states laws have been proposed forbidding the physician specifying the pharmacy to which his prescription should go. The basis of this is, the assumption that all pharmacists are perfect in their art and that all drugs dispensed by them are of precisely the same quality. Nevertheless, there has not been, within the limits of our knowledge, a solitary investigation as to the quality of drugs in the pharmacies, made by any authority whatsoever either in the profession of pharmacy or outside of it, that has not revealed such wide variations in the strength of the drugs as to render the use of them by the physician anything but a matter of certainty. It is not necessary to adduce any quotations to prove this point. No reading physician has failed to meet published records of such examinations. Even in New York City, the metropolis of the world, variations in many of the most-used drugs, reaching as high as 45 percent, have been reported by the pharmaceutical inspectors themselves.

The fact is, that these regulations imposed by organized pharmacy are designed eventually to take the prescribing of drugs out of the hands of physicians entirely and leave this matter to the druggists.

Since the movement has apparently the sanction of many prominent men in medicine, it is well for us to inquire how far it is likely to go.

The profession is to be composed of two classes of physicians, but not more. One, the very highly cultured, scientific surgeons and research-workers; the other, the druggists developed into practitioners of medicine, corresponding to the licentiates of the Royal College of Apothecaries of London. These men will keep their pharmacies and also do the bulk of the family practice. The ideal is English and emanates from an English overlord, King George.

Between these two millstones, the American doctor, as he has existed heretofore, will be ground to powder. The others will be



DR. ELIE METCHNIKOFF

This distinguished Russian physician, for many years connected with the Pasteur Institute, Paris, has recently passed away. He is best known for his work with the Bulgarian bacillus. This picture is a reproduction of a painting by his daughter, Olga Metchnikoff.

crowded out entirely. It would be wise for physicians located in country districts, where it is absolutely necessary that they dispense their own drugs, to take refuge in the ranks of the pharmacists, in view of the eventualities.

Unfortunately, the warning comes too late. It is not to be doubted that the various state boards of pharmacy will quickly place obstacles in the way of anything like a general irruption of practicing physicians in the ranks of pharmacy. In the mean time, physicians

who desire their sons and other pupils to become real doctors had better be careful to send them to such colleges as teach therapeutics. Fortunately, there are still some of these in existence.

In the meantime, we warn our readers that forty-five legislatures will be in session next winter. In many of them, bills will be introduced to "regulate" the dispensing of medicine by physicians. Be prepared for the fight that is imminent *in your own state*.

Leading Articles

My Experience With Some Old-Fashioned Drugs

By SAMUEL E. EARP, M. S., M. D., Indianapolis, Indiana

Clinical Professor of Medicine, Indiana University School of Medicine; Clinician, Indianapolis City Hospital, St. Vincent's Hospital, Bobbs & City Dispensary, Robert W. Long Memorial Hospital; Member of Staff, Deaconess Hospital; Lecturer, St. Vincent's School for Nurses, and Deaconess School for Nurses

THREE young men who a year ago had been graduated, from different medical institutions, recently agreed in a conversation that each one of those colleges was almost perfect in its equipment of all laboratories, still, for some reason, when brought face to face with a patient, the stumbling block for each graduate seemed to be a deficiency in his knowledge of drugs and their application. I am under the impression that others have heard this same criticism. Perhaps the therapeutic field has become so vast that it cannot be covered in the course given in the average curriculum.

The therapeutic nihilist was increasing for a time and therapy in many medical journals was sparse and almost a farce. *The Therapeutic Gazette*, *THE AMERICAN JOURNAL OF CLINICAL MEDICINE*, and a few other publications kept forging to the front, but elsewhere there was a scarcity of drug therapy. This became noticeable and its influence discernible in the inefficient work of the recent graduate everywhere. This view was generally accepted, and it became necessary for the medical press to inaugurate a campaign of education. The *J. A. M. A.* gave space to a department of therapeutics, and the trend in this avenue is seen in the makeup of other medical journals.

In my bedside clinics at the hospitals, I do not neglect the pathology and laboratory diagnosis, but I emphasize the methods of palliation and cure. If it is necessary to review physical diagnosis and therapeutics, I do so by a drill early in the course. Furthermore, the best (as well as the worst) of us, unless warned, will collect a few therapeutic cobwebs in our brains. If we have a tendency to specialize in our work, there is some

danger of neglecting a study of the things that alleviate or cure.

Those who have read the reports of the "Wine of Cardui trial" in Chicago remember that two witnesses who are authors and of more than local fame got confused concerning Hoffmann's anodyne and quassia, and that, when the lawyer in substance asked, "You have used these remedies but do not know the source or that one is known by another name?" their answer was in the negative. I fear that the proprietary literature, so easy of access, so glowing in language, so positive in assertion now and then, has overshadowed some of the substantial remedial agents. The European war has brought us to a realization of this fact. Prices are high and some drugs are scarce, others can not be obtained; and, of necessity, the rank and file of us have found it opportune to refresh our memories concerning many of the agents which were popular twenty or more years ago.

The reliable agents in many instances may now be obtained in different forms, more active principles are being used. Some are given in smaller doses, but more frequently, until their effect is evident. This is the progressive side of medicine; but it is the old remedy at the base which has furnished the means by which cures can be accomplished. It is not a digression to say that some of these facts were outlined in the "Textbook of Alkaloidal Practice" by Waugh and Abbott which I reviewed in *The Central States Medical Monitor*, now *The Indianapolis Medical Journal*, in 1907. I shall call attention to some of the agents with which we must needs be familiar; and, yet, until "the unpleasantness across the water," some of them were almost abandoned. Perhaps I may only be

reviewing briefly the experience of many of the readers; this, indeed, I hope to be true. At any rate, I shall summarize from my own observation in private and hospital practice.

Aconite and Veratrum

After a "Rip Van Winkle experience" in the case of some practitioners, I am glad, indeed, that aconite is getting its full recognition. For some, aconite is almost a new remedy, while others have refreshed their memories, and still others have continued to recognize it as one of their potent agents in practice.

To those who know, aconite (and aconitine) has been almost a substitute for the lancet. In the acute infections characterized by a high, resisting pulse, skin hot and dry, and vascular excitement, it is unequalled. It cannot be supplanted by any other drug in the first few days of scarlatina, measles, tonsillitis, rheumatism, and in inflammation of the serous membranes. In continued fevers, it should not be used; hence, it is not indicated in typhoid fever, unless during the first few days when there is a safe heart—but it is not necessary. What better can be used in excessive heart action, as for instance in exophthalmic goitre, palpitation from some lesion of the nervous system? Only, there must be here no evidence of valvular disease or dilatation; although even under these circumstances a few give aconite, but with caution. In the diseases of infancy and childhood, it has no superior and no agent can successfully take its place. Furthermore, we are less likely to find a defective heart during childhood. I shall not endeavor to call attention to a score of other indications, being content to mention conditions wherein it is the best therapeutic agent.

Another point to consider is, that it is a positive agent and gives results, and it is not desirable or necessary that it be given indefinitely. It acts, you recognize it at once, and it can be given symptomatically. Its action should be watched. In the hands of the ignorant and careless, it is dangerous, but, given by an intelligent and cautious person, it is reliable and safe. I prefer the tincture in 1-2- to 1-minim doses every twenty to thirty minutes, but discontinue if not needed or there be some contraindication.

In using aconite, there are those who prefer the alkaloid aconitine, and these record as good results as are obtained from digitalin and veratrine. I shall not consider *veratrum viride*, except to say that I recognize it as a

remedy that should be prescribed more frequently. Just one point is to consider wherein disappointment follows its use. If the patient is not quiet, the best results cannot be obtained. When the patient under the influence of veratrum has a satisfactory circulation, if he assume an upright position or walk, then the change in the pulse is at once perceptible. When you give veratrum or any of its preparations, keep the patient quiet, get good results, and do not blame a drug for inefficiency when the fault is with patient or physician. This injunction does not apply to this drug only.

Calcium

A number of derivatives from this old remedial agent have proved useful. For many years, I have used the chloride or the lactate in hemorrhagic conditions of typhoid fever and in pulmonary hemorrhage. Beasley has published two reports in *The Indianapolis Medical Journal*, showing his success in the treatment of tuberculosis by intravenous injections of calcium chloride. In *The Boston Journal of Cutaneous Diseases* for October, 1914, White called attention to the use of calcium lactate in the treatment of certain dermatoses. The rationale of its use is based on its property to increase the coagulatory power of the blood and to render the morbidly permeable vessel-walls less permeable. Conditions of an exudative character are suggested. It is appropriate in urticaria, purpura, erythema multiforme, and hyperidrosis. White's formula is:

Tincture of capsicum..... m. 8
Calcium lactate..... grs. 160
Chloroform water..... ozs. 16

Dose: Two tablespoonfuls in water before meals.

During the preparation of an article relative to the use of *sulphide of calcium*, I wrote to six authors for a statement of their experience in its use, but none of them had had any personal experience. This journal kindly published an abstract of the article. I am still convinced that it is a reliable remedy. The files of this journal, so far as my observation goes, will prove its efficacy more than any other publication.

Spirit of Nitrous Ether

Perhaps we forget that there is ample argument for the use of this remedy in the febrile diseases of infancy and childhood. It is a sedative upon the circulation, a diaphoretic, and as a diuretic it maintains the action of the kidneys. We do not fear its toxic effect, and, yet, it is potent. If some of

the heavy drugs are given in small doses, there is no effect, if in large ones, there is danger.

Nitrous ether can be combined with aconite and veratrum viride, if desired. Every little child having an elevated temperature needs plenty of water and, if this agent is put into a glassful of water, frequent sips may be taken, and then, if this plan is followed, very often the patient will soon quiet from its delirium, the skin becomes moist and a calm sleep follows.

Perhaps we may replace the word ephemeral by another, but we all know the little brash of fever often experienced during childhood, though such a condition may have many causes. This can be easily conquered, and quickly, by the use of a tablet of calomel and soda, followed by the agent to which I have called attention. Combinations of spirit of nitrous ether, liquor of ammonium acetate, elixir of hops, and lactucarium, two or more of them, may be made. The late Dr. John V. Shoemaker, the widely known therapist, had a favorite formula, which he used in acute bronchitis, acute rheumatism, and fevers, which was constituted as follows:

Sp. Aetheris nitrosi.....	ozs. 2
Aquæ camphoræ.....	ozs. 2
Liq. ammonii acetatis.....	ozs. 2
Antimonii et potassii tartratis.....	gr. 1
Morphinæ sulphatis.....	gr. 1-2

Dose: A tablespoonful in water every hour or two, until relieved.

Asafetida

Since I am excluding the agents with which we are especially familiar, those of recent date and those most commonly used, looking for virtue in the older remedies, I necessarily must not be forgetful of asafetida. This is another remedy most efficient in the ailments of infancy. It is serviceable in colic, nervousness, indigestion, flatulence, and even when a carminative or expectorant is needed. Let us say, when a safe though mild antispasmodic is desired. Moreover, in nervous women (especially young girls), and in old men, it can be advantageously given. For an ex-

ample; a catholic priest who recently returned exhausted from mission work had insomnia. During other attacks, he had been given codeine. I gave him a pill of asafetida, containing 5 grains, each hour until he had taken three. I must confess that, while hopeful, I had some doubt when asafetida had to follow in the wake of codeine, but it relieved his insomnia. This formula may be used:

Mist. asafetidæ.....	oz. 1
Elix. valerianæ ammoniatæ.....	oz. 1
Aquæ menthæ piperitæ.....	oz. 1
Elixir simplicis.....	oz. 1

Dose: One to two tablespoonfuls in water every two to six hours.

Aloes and Colchicum

Aloes affects the large intestine, increasing the peristalsis, without causing excess of secretion. The action is slow and the stool is softened. On account of its tardy action, I order a saline three hours after the aloes has been taken.

We agree that many conditions are relieved by thorough catharsis, that is, keeping the bowels clean. A number of years ago, a man with whom I was acquainted was given a prescription containing aloes, 1 grain, blue mass, 1 grain, Venetian soap, 2 grains, to constitute 1 pill. He called it M. I. S. T. He heralded it as a cure-all. From its sale alone, he accumulated \$200,000. It was advertised extensively.

At one time, no prescription for gout was written unless it contained *colchicum*. In certain arthritic conditions, I like to use the wine of colchicum and iodide of sodium, and sometimes the salicylate of sodium added to the combination.

The length of this contribution is sufficient, otherwise we might review colocynth, conium, elaterium, guaiacum, ipecac, lactucarium, valerian, senna, and others. Some perhaps are objectionable under certain conditions, some are very mild and of little service, while others are powerful in action and deserve continued recognition.



Nonoperative Gynecology

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

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EDITORIAL NOTE.—*This is the second in the series of articles upon nonoperative gynecology which Professor Rittenhouse is contributing to this journal. This is a topic in which every general practitioner is interested; therefore we believe that every succeeding instalment of this series will be eagerly welcomed by every reader of this journal. Professor Rittenhouse will be glad to answer any questions, and we hope that the series may bring out many comments.*

[Continued from July issue, page 576.]

URETHRAL CARUNCLE

WHILE we hear comparatively little about urethral caruncle, yet, it is a condition capable of causing a great deal of suffering. Such a growth often goes unrecognized and the symptoms it produces are referred to other causes. It occurs with considerable frequency especially after the menopause, if I may judge from my own observation; for, I have never seen this condition in a woman under twenty years of age, while more than half of my subjects have been over fifty.

Urethral caruncle is a little newgrowth in the meatus of the female urethra; occasionally it is located higher up in the urethra, but I have never found one further than half an inch from the meatus. Usually it is plainly visible on inspection, only rarely a urethral speculum being needed to expose it.

The shape of these excrescences varies greatly. A few have a distinct pedicle like a polypus, but most commonly the growth is sessile, like a wart; occasionally it is of a diffuse form, appearing as a thickening of the urethral mucosa around half of its circumference or more. In size it varies from that of a large marrowfat pea down to that of an insignificant pimple.

The two most characteristic features of this growth are its color—which is a very dark-red, contrasting strongly with the pink mucosa—and its exquisite sensitiveness. One patient described the sensation caused by merely touching it with the finger as “nervetracking.” Another compared it to touching the nerve of a tooth with a dental drill. Because of this extreme sensitiveness, the effect of this little growth upon the patient’s nervous system usually is considerable, sometimes extreme. I saw one such victim who, because of it, seemed to be on the verge of insanity.

The etiology of these caruncles is not always clear. I believe the most common cause to be long-continued hyperacidity of the urine; this belief being founded upon a

number of cases in which there was a tendency to relapse after successful treatment, while upon changing the diet, so as to reduce the acidity of the urine, this tendency to relapse disappeared. So far as I can recall, my patients have all had very acid urine when they first presented themselves for treatment. I may say here that every doctor ought to have the means for measuring urinary acidity. The acidimeter sometimes described in the advertising pages of this journal is simple, inexpensive, and readily used.

The Symptoms and Diagnosis

The principal symptoms produced by caruncle are, dyspareunia, and pain which is referred to the urethra or bladder. The latter often causes the mistaken diagnosis of cystitis, but the bladder pain is more properly a neuralgia, sympathetic with the urethral irritation. Treatment for cystitis sometimes gives temporary relief, because washing out the bladder with hot solutions has a soothing effect on the neuralgia, and the use of alkalis by mouth diminishes the acidity of the urine. I am not convinced that caruncle ever produces true cystitis; in the few cases in which I have found the two associated, the women had been catheterized and may have been infected by the catheter.

The diagnosis of this condition is not difficult, and a mistake can scarcely occur except as the result of careless examination or none at all. Quite a number of my patients reported having been treated by internal medication, without a local examination having ever been made; but the acme of diagnostic obtuseness seems to have been reached in two of them, in whom washing out of the bladder had been attempted, but abandoned on account of the excruciating pain caused by attempting to introduce the catheter—and all this without discovering the true condition!

It is not pleasant to criticize one’s confrères, but there is no disguising the fact that some members of the profession stand in need of the injunction which was repeatedly hurled at my class at college by one of the most respected of my old professors: “Gentlemen!”

he would say, "if you forget everything else I have taught you, remember this: Examine! Examine! Examine!! Examine!!!" uttered crescendo, and each repetition emphasized with his fist.

The diagnosis can readily be made by inspection. The exquisitely sensitive, dark-red growth can not easily be mistaken. Only when the caruncle is higher up in the canal is a urethral speculum needed.

The Treatment of Urethral Caruncle

The treatment which gives good results in the majority of instances is, cauterization. A probe is wound with cotton and dipped into a 4-percent solution of cocaine. If this be roughly pushed into the urethra the pain will be very severe; but this is quite avoidable. First apply the cocaine to the visible portion of the growth; in a few minutes that will be sufficiently deadened to permit the probe being inserted a little farther, and so gradually the first half inch of the urethra may be thoroughly cocainized. A pointed pencil of nitrate of silver is now inserted and revolved for a few seconds until the whitening of the diseased tissues shows that the caustic is taking hold. It is best not to make the cauterization too severe. The object is not, to destroy a large amount of tissue (which might result in cicatricial contraction and stricture), but rather to cause absorption of the diseased tissue in the ten days or two weeks following the application. Care should also be taken not to introduce the caustic too far into the urethra; the pain will be intense if it touches the uncocainized mucous membrane.

The cauterized area should be allowed to heal thoroughly before another application is made. This healing will require ten days or two weeks, according to the severity of the cauterization. During this interval, a certain amount of absorption of the pathologic tissue will take place, and upon this absorption will depend the number of treatments required for a cure. Usually from three to five applications will suffice, if the proper interval is allowed between them; while, if they are too close together to permit perfect healing, an amount of inflammation will result that delays the cure. These cauterizations should be continued until a catheter can be passed without giving pain.

One naturally would expect that for a few days following a cauterization urination would be very painful; but the opposite usually is true, the patient experiencing a degree of relief to which she has long been a stranger.

If the growth has a pedicle, it should be snipped off, under cocaine, before the caustic

is applied. If it is sessile, excision usually causes more pain than will cauterization. Some doctors prefer excision, because thus the treatment is concluded in less time. For this reason, patients from a distance sometimes are subjected to it, because they do not wish to remain in the city for five or six weeks. But, whenever it is possible, I prefer cauterization, as in my experience it has caused less pain and no strictures, while several of the latter have come under my notice where excision had been performed.

A Few Illustrations From Practice

Perhaps I can best illustrate the variations that are met with in these cases by describing a few clinically.

Mrs. C., aged about 24, married about two years, never pregnant, suffered intensely from dyspareunia. She had become almost a nervous wreck, was melancholy, indifferent, and latterly had dysmenorrhea. Her husband told me that when he married her she was of a happy, cheerful disposition. (This was the patient referred to in my last month's article.) Like the woman told of in the Scriptures, she had suffered many things from many physicians, and was nothing bettered. In her home city, she had been subjected to a laparotomy and was told that her ovaries had been removed; but, as she afterward became pregnant, the removal, if done at all, certainly was not a complete one.

Upon taking charge of her, I quickly located a caruncle in the urethra, about a quarter of an inch up. This fact probably accounts for its not having been discovered by her other doctors, although it could be exposed even without using a speculum. It was of the size of a small pea, slightly pediculate, and had a considerable base of diseased tissue. After thorough cocainization, I snipped off the pedicle and cauterized the base with a pencil of silver nitrate. Ten days later, she reported great improvement. I cauterized mildly at intervals of a week or ten days, and in about six weeks, as nearly as I can recall, she was entirely well.

Miss L., aged 26, virgin, had a sessile caruncle near the meatus. The principal symptoms were painful micturation and neuralgia of the bladder. She lived in a distant city. Her physician had correctly diagnosed the condition and treated it by cauterization, but without success. Whether the failure was unavoidable or due to faulty technic I have no means of knowing. I advised a more thorough trial of cauterization, and excision as a last resort. The doctor re-

sorted to excision at once. The lesion was cured, but stricture resulted.

Mrs. L., aged 83, mother of four children, consulted me for cystitis. Her urine contained pus and mucus, and she had been repeatedly catheterized two years before. Micturition was very painful. Inspection revealed a sessile caruncle just within the meatus, of the size of a small pea. As I saw her at her home and the bladder symptoms were urgent, I tried to wash out the bladder with boric-acid solution, but the attempt to introduce the catheter was so painful that I was compelled to desist. I then proceeded to cocaineize the urethra and cauterized the caruncle. Immediately thereafter I was able to wash out the bladder, to the great relief of the woman. I repeated this irrigation daily for some time, applying cocaine to the urethra for the first few days. The caruncle was cured long before the cystitis was.

Mrs. E., aged 49, married, but childless. She experienced pain on sitting down, and was troubled by bladder neuralgia and painful micturition. Her doctor had diagnosed cancer of the bladder and told her husband there was no help for her. The error in diagnosis resulted evidently from two unusual features of the newgrowth, namely, that it bled a little at times and its shape was somewhat uncommon. It was neither pediculate nor wartshaped, but involved the entire circumference of the urethra. The mucous membrane for the first half inch was much thickened, everted, and presented the characteristic color and sensitiveness. The woman's revulsion of feeling may be imagined when I assured her that she had no cancer, was not doomed to die, and would be well in a few weeks. Five cauterizations spread

over about eight weeks produced a thorough cure.

Mrs. W., aged 60, mother of five children, was troubled by neuralgia of the bladder and retention of urine, which exhibited ammoniacal decomposition. A prompt cure resulted from treatment by cauterization and the washing out of the bladder with boric-acid solution. For almost a year she showed a tendency to a recurrence of the trouble, owing to the great acidity of her urine; however, the administration of potassium acetate and an occasional mild use of the caustic finally ended these relapses.

Where hyperacidity of urine is persistent, the continual taking of the potassium salts is not advisable, and then it is better to reach the condition through the diet, by cutting down the meat (especially beef) and eating plenty of vegetables, including spinach, stringbeans, asparagus, lettuce, cabbage, turnips, and the like. Whole-wheat bread should be substituted for white bread.

Mrs. M., widow, aged 32, mother of one child, had severe neuralgia of the bladder, complicated by hysteria, and her condition was diagnosed as cystitis. She was kept in bed for three weeks and dosed with urotropin, but without being benefited. The next diagnosis was ovaritis and ovariectomy was advised. When she came to me, I found a small sessile caruncle near the meatus, which promptly disappeared, and she got well, after three cauterizations.

In closing this article, I want to emphasize two points, namely, the importance of careful examination and the superiority of mild over severe cauterization. Instead of violently destroying the pathologic tissue, I prefer to stimulate nature to absorb it.

THE spice of life is battle; the friendliest relations are still a kind of contest; and if we would not forego all that is valuable in our lot, we must continually face some other person, eye to eye, and wrestle a fall.—Stevenson.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

Medical Director of The Mudlavia Sanitarium

[Continued from July issue, page 589]

THE majority of doctors find the treatment of chronic diseases a very serious stumbling-block in the way to reputation and financial prosperity. The reason is, that they follow routine ways or some fad, instead of going about their work systematically, seeking out and applying correct principles, formulating a definite plan and adhering to that persistently.

Three Cardinal Principles Involved

The three cardinal principles in the treatment of chronic diseases are: (1) rest, (2) fasting, and (3) appropriate drug-treatment. As a matter of course, these principles must be applied with judgment.

Rest, for instance, does not mean that a man shall drop his work, go home, pull off his boots, climb into bed, and remain flat on his back indefinitely. True, he may need rest in bed or in a hammock, with cool breezes playing about him. But, also, he may need rest from whisky, heavy dinners, mental excitement. Rest for the overworked stomach, the paralyzed bowels, for the nervous heart and strained nerves, the tired brain may be secured in a variety of ways. Lying down perfectly still and relaxed for short intervals is a very good way to secure rest for heart, brain, and nerves—will “pull one together” in an astonishing way, and, constantly practiced, it undoubtedly lengthens one’s term of life.

In chronic diseases, the nutritive processes are abnormal. Waste is not promptly and properly eliminated—it accumulates. The system does not reduce its anabolic products to their lowest terms, thus causing friction and making the work of elimination all the harder. It is a great mistake to add further to the difficulty by giving more and more food to patients in whom the process of nutrition stagnates. Food will not be transformed into nourishing red blood unless the system needs it and there is appetite for it. To eat food under such conditions, simply means to obstruct the circulation with an improperly digested, nonvital pabulum which increases the torpor and burden of the system, depressing the recuperative impulse.

Fasting rests the heart, making its work easier; it rests the stomach and bowels, enabling them to store secretory and peristaltic power; it lowers blood pressure, flushing the area of elimination; it increases the ingestion of water, and softens and relaxes the entire body, so that the work of cleaning can proceed with greater rapidity and with the least expenditure of vital force.

Fasting may be absolute for one day or for several days; it may be partial, by abstaining from one meal or two meals or by adhering to a very light diet. But, we should always avoid extremes and hobbies. Rather, we should make successful experience the sole judge of the value of our methods and be prepared to discard them for others if unfavorable symptoms develop at any particular time.

Thoughts of Some Authorities About Resting

In discussing the subject of rest, I can fully subscribe to what the late John Hilton has said:

“In my reflections on the subject of rest as a curative agent, my mind naturally reverted to that period of man’s existence when it was the sole curative means of which he could avail himself. I could but picture to myself the timorous awe which must have been engendered in his mind by the first accident which happened to him. Let us imagine our first parents suddenly thrust out of the Garden of Eden and doomed to toil for their daily bread, with hands unused to labor, inexperienced in the substitutes for unnecessary exertion and in the avoidance of local injury, and exposed to all the accidents of a precarious existence. Let us try to realize the awestricken dismay which must have oppressed man’s mind on the infliction of his first wound, his first experience of pain—the breach of surface disclosing to his sight his blood flowing unceasingly or leaping, at sustained intervals, from its opened chambers, his sense of fainting and his ultimately sinking on the earth under the foretaste of death; this, too, with the recent denunciation “Thou shalt surely die” still ringing in his ears. Can words depict the hopeless anguish which he must have endured? But what follows?

See him awakening to life again, the stream of blood stayed, the chasm plugged, his strength revived, and day by day that wound—which he regarded as the badge of death, the vengeance of the Creator's wrath—narrowing and healing, till it could hardly be seen.

"I have made these observations for the purpose of showing the original promptings of nature to man, for the alleviation of what must have necessarily befallen him in his altered condition. Pain was made the prime agent. Under injury, pain suggested the necessity of, and, indeed, compelled him to seek for, rest. Every deviation from this necessary state of rest brought with it, through pain, the admonition that he was straying from the condition essential to his restoration. He must have observed with astonishment the breaking asunder of the newly formed tissue or the steady development into normal structure, which occurred in exact accordance with the disturbance or rest to the parts, which the sense of pain had enabled him to regulate so accurately, and to employ so beneficially for his own personal relief and comfort."

Rest and Growth

Growth is the antitype of repair, prefiguring the physiological capabilities of existing structures to repair themselves. Without digression, I may say that so intimate is the association between rest and growth as to make them appear, upon a superficial contemplation, to stand to each other in the relation of cause and effect. Accurate observation of the animal and vegetable world certainly reveals their perpetual coexistence; and growth, as a rule, seems to proceed, *pari passu*, with physiological rest.

Another writer, Mr. Ward, says: "All plants require rest, and obtain it, in some countries, by the rigor of winter, in others, by the scorching heat of summer. Cultivators often fail in their attempts to grow certain plants from want of attention to this essential part. Thus most alpine plants, which enjoy an unbroken rest under the snow for several months, are very difficult of culture in our mild and varying winters. The winter of 1850-51 was ushered in by some heavy falls of snow, with which I filled my alpine case, giving the plants a perfect rest of three or four months, and with a most satisfactory result: the *Primula marginata*, *Linnæa borealis*, and other species flowering much finer than usual. Many of these beautiful plants would, I am convinced, succeed well if kept for five or six months in an ice-house.

"Plants, in hot countries, have their periods of rest in the dry season. In Egypt, the blue water-lily obtains rest in a curious way. This plant abounds in several of the canals at Alexandria, which, at certain seasons, become dry; and the beds of these canals, which quickly become burnt as hard as bricks by the action of the sun, are then used as carriage roads. When the water is again admitted, the plant resumes its growth with redoubled vigor."

Also, our great master on physiology, John Hunter, has not left this particular field unexplored, for we find, not only in his published works, but in others which remain in manuscript, that the subject of rest occupied no inconsiderable portion of his attention. "Most plants," he tells us, "close their leaves, others their flowers, at particular hours of the day or night; and with such regularity does this period of rest take place that more than one vegetable physiologist has proposed to construct from them a floral clock." As a matter of fact, the great Linnæus had such a floral time-piece in his garden, as have had other botanical gardens after him.

We all know how eagerly rest is sought for by the lower animals, especially in periods of suffering from injury or disease—how they endeavor to escape from the prying curiosity of man, in order that the injury may be the more speedily repaired.

The value of rest in fostering the production of that highly organized animal-tissue that forms so large a portion of our staple food, is well known to the stockkeeper and grazier. A homely illustration may be found in the fact that in infancy the child which sleeps much thrives best. *Mutatis mutandis*, the observation is equally true, that the wakeful, restless child seldom displays the same evidence of active nutrition. Doubtless all will admit that in infancy development is in its highest state of activity and that the healthy infant passes the greater portion of its life in a state of rest and sleep. Growth—the renewal of some parts, and the fresh development of others—seems thus to claim sleep and rest as its helpmeets.

Repair is but the repetition of growth: the same elements, the same kindred conditions are necessary to the same results. Rest is the necessary antecedent of the healthy accomplishment of both repair and growth. This surely is the natural suggestion of a means toward an end that never must be lost sight of by the physician or surgeon. For example, children who are ill and lose their rest waste very rapidly, more rapidly in pro-

portion than do older people; but as soon as the morbid condition subsides and rest asserts its power, the recovery or repair becomes extremely active, accompanied by an increased tendency to sleep; sleep supplying the great desideratum previously required.

The interruption of rest by local disease occurring to persons in the middle period of life does not cause the same degree of exhaustion and wasting as in the young. They bear the loss of sleep better, because their constitution has to sustain the stress of repair only—not of both, development and repair, as in the child. Their recovery is slower; their subsequent sleep is not so profound nor so prolonged, nor their rest so complete. The defective sleep and slow repair that manifest themselves in the old after injury of any kind are familiar to us all.

What I have here endeavored to inculcate is, that growth and repair bear an exact relation to due physiological rest, local and general.

Brain Activity Versus Rest

Let me employ a familiar example to illustrate the effect of rest on the brain, by referring to any overworked member of our own profession. Free from structural disease, but worn and appearing prematurely old from exhaustion by mental labor—not physical exertion—he takes his holiday. The doctor's rest from professional duties consists in riding, walking, shooting or fishing. It is physical exertion which he selects for his relaxation; but during the same period he carefully excludes all worry, all mental strain. Under these circumstances, I conceive, some portions of his brain are nearly at rest, while others are occupied with their appropriate function of regulating muscular exertion. This man is, in fact, calling into activity the latent or suspended functioning of the cerebral centers, leaving the higher, the intellectual part of the brain to work out its own recovery from overfatigue or exhaustion by rest; that is to say, by being relieved of its own peculiar function or activity. After a time the vacationer returns greatly invigorated, improved in general appearance, active, with mental vigor replenished, and equal to almost any amount of professional exertion that may present itself, without fear of fatigue to his brain.

Let me offer this additional observation regarding the beneficial influence of rest, that is worth remembering: Those persons who drop off to sleep quickly, anyhow and anywhere, and sleep soundly, undisturbed by

active dreaming, are, *ceteris paribus*, capable of sustaining a greater amount of mental and corporeal exertion than those who find it difficult "to get off to sleep," who sleep lightly, and, dreaming much, awake but little refreshed.

Bearing on this subject, I, like others of our profession, have had repeated occasion to observe the effect of overwork upon men who use their brains with an expenditure of energy inconceivable to the thoughtless—men of widespread mercantile affairs, men engaged in money-transactions on a large scale and involving much anxiety. The condition of such of my patients attested the applicability of these remarks by their mental and physical exhaustion, by their depression of spirits, and by their want of self-confidence. Yet, in the case of such men, their restoration to health has been made complete by mental leisure, by "going out of town," and by taking plenty of exercise in the open air, while abstaining from the real disturbing cause, their business.

Nature's Methods of Securing Physiologic Rest

Having thus very briefly and very imperfectly reviewed the subject of rest in relation to the body generally, let us inquire into some of the expedients which nature adopts to secure the same end in its individual organs.

All viscera (as in the case of the brain, to which I have already alluded) require the alternate condition of activity and rest in order to keep them vigorous and in health. If this condition is not fulfilled, structural changes and deterioration of function are sure to follow. Indeed, concerning the etiology of the diseases of individual organs, it may be asserted that a large proportion of them originates in circumstances which deprive any organ of that rest which by nature is required for the performance of its healthy functioning.

Take, for example, the heart. When overtasked by constant overstrain, as in disease of its valves or the large vessels, or by excessive athletic exercises, and thus deprived of its appropriate rest, this organ becomes liable to the various alterations in its structures that postmortem examinations daily reveal. The liver, unduly stimulated by excessive potations, by needless amounts of food, or by habitual irregularity in one's diet (its physiological harmony with the other organs of digestion being thus constantly disturbed), glides into disorganization, for the same reason. The kidney, too, if its functions be disturbed by the abuse of alcoholic drinks,

which entails an unnatural and continued stress either upon its malpighian or tubular portion, manifests the same tendency to structural decay as a consequence of its loss of needful rest.

Dr. Milner Fothergill ("Practitioner's Handbook," p. 388) has pointed out another fertile source of disturbed rest in the case of the kidney, and also how to mitigate it. "This knowledge [that urea is largely derived from the splitting up of albuminous material in the liver as well as from disintegrating tissues] has enabled us to relieve impaired kidneys by diminishing the amount of work they have to do. A large amount of the nitrogenized food we take is unnecessary and is not required for tissue building; a comparatively small amount only of nitrogenized matter daily is sufficient for that purpose. We take it because we like this form of food and because the stimulating properties of nitrogenized substances render them agreeable. The energy of the meat-fed man, as compared with the vegetable-eater, is distinct and marked, but gout and other troubles are its inseparable alloy. There is a Nemesis behind the force-manifesting animal food. The presence of large quantities of waste nitrogen in the blood maintains the kidneys in a state of high functional activity, and the hyperemia of active function in time leads to the production of connective tissue in excess. Such is the origin of many cases of chronic renal disease; such, indeed, is the natural history of interstitial nephritis, of the contracting, granular, cirrhotic or gouty kidney."

It is, I believe, an admitted physiological axiom, that each structure or organ, while actively employed, is in a state of vascular excitement or turgescence, and, therefore, enlarged during that time.

So, it is noticeable that each organ of the body that is liable to a rapid supervening of activity in its proper function is so placed in relation to surrounding structures as to permit of temporary enlargement during the persistence of that activity. When the organ returns to the state of rest or period of self-reparation, it may be said to have resumed its normal, or standard, dimensions.

Secreting organs, in some of which vascular turgescence is extreme and prolonged, are relieved of their excessive congestion by their tubular outlets. The elasticity of the en-

closing capsule exerts its beneficial effect toward the same end by inducing centripetal pressure, and this tends to diminish the size of the organ as soon as, its function performed, its state of physiological excitement begins to diminish. The elastic capsule thus maintains the healthy quiescent size of the organ.

The liver is enclosed within a strong elastic peritoneum and it has also its proper elastic, but thin, capsule; and I may add, as probable, that the tissue found in Glisson's capsule, surrounding the portal vessels, and so on, in their distribution within the liver, may influence their condition by its elasticity. These forces, aided by the contractile power of the blood-vessels themselves, bring the liver back to its condition of rest and maintain it; thus allowing the individual minute secreting parts to recover their physiological strength and their tone.

Again, the liver is so placed as to have the additional advantage of pressure from without, by its being subject to the contractile power of the muscular walls of the abdominal parietes and the diaphragm, especially so during exercise and increased respiration. This no doubt explains the benefit of walking-exercise in cases of congested or torpid liver, at which occasions the liver is compressed between the diaphragm and the respiratory part or upper half of the abdominal parietes.

Oliver Wendell Holmes ("Autocrat of the Breakfast Table," p. 66), treating of the value of walking, rowing, and riding, writes thus of the influence of the latter upon the liver:

"Saddle-leather is in some respects even preferable to sole-leather. The principal objection to it is of a financial character. But you may be sure that Bacon and Sydenham did not recommend it for nothing. One's hepar, or, in vulgar language, liver—a ponderous organ, weighing some three or four pounds—goes up and down like the dasher of a churn in the midst of the other vital arrangements, at every step of a trotting horse."

I would here suggest that every squeeze of the liver upward, in any of the exercises named, must send a squirt of venous blood through the inferior vena cava into the closely contiguous right auricle, while every downward movement draws open the same vein slightly in readiness for the next upward jet.

[To be continued.]



Vaccine- and Serum-Therapy in Everyday Practice

VII. Infections of the Skin and Subcutaneous Tissues (Continued)

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from July issue, page 592.]

Erysipelas

AS WAS remarked when we were considering the subject of cellulitis, erysipelas is the most typical form of that disorder, and is caused by a special variety of streptococcus, namely, the streptococcus erysipelatis of Fehleisen, a microorganism of extreme virulence. However, cultures made from cases of erysipelas always show staphylococci in great numbers coexisting with the streptococci. Consequently, in the bacterin-treatment of this dangerous malady, it has become quite customary to use a polyvalent combined stock bacterin, containing, in addition to the specific streptococcus, the various staphylococci, or at least the staphylococcus albus.

Owing to the extreme virulence of the specific etiologic agent and the consequently rapid course of the disease, autogenous bacterins are impracticable; besides, the reports of many competent observers show that stock bacterins yield brilliant results in erysipelas.

The initial dose, for adults, of the combined bacterin should contain about 20 million streptococci, combined with 100 million staphylococcus albus. If some improvement is not observed within twenty-four hours, the dose should be repeated, but increased by 25 percent.

The first dose of bacterin rarely stops the spread of the disease, there being usually some extension during the ensuing twenty-four hours or so. But in most cases a change will be noted in the color of the infected skin, from an angry red to a darker, brownish-red; the usually sharply defined and elevated margin now shows little or no elevation and shades off gradually into the surrounding skin. Relief of pain and burning is usually experienced by the patient within a few hours.

The streptococcus does not stand heat well; so, heat, locally applied is of considerable value.

Iodine ointment, U. S. P., with ichthyol, 25 percent, applied to the infected area and well out into the apparently uninvolved tissues is a time-tried remedy. Some writers advocate the local application of undiluted

phenol, to cause desquamation; but, personally, I prefer applications of iodine and ichthyol, as just recommended.

One other external measure merits mention, namely, a dressing kept saturated with 95-percent alcohol. Pawlowsky's laboratory tests show that this rapidly destroys the streptococci. It strikes me that the addition of tincture of iodine, 10 to 15 minims to the ounce of the alcohol, might enhance its bactericidal properties.

For internal administration, the indicated remedies of merit are calcium sulphide, strychnine arsenate, quinine, and tincture of ferric chloride. Or the iron, quinine, strychnine, and arsenic may conveniently be administered in the form of the triple arsenates, which certainly is a much more agreeable preparation than quinine sulphate and tincture of ferric chloride.

Paronychia (Felon, Whitlow)

In this class of infections, the staphylococci are almost invariably the infective agents; but in those cases in which the bone is involved the Bacillus tuberculosis is sometimes the causal organism.

If these cases are seen *early*, bacterin-treatment gives good results. If pus is present when the case is first seen or should it subsequently develop, incision will be necessary, with dressings kept saturated with Wright's citrate solution. A very useful measure, in conjunction with bacterin-treatment, in early cases, is, to wrap the finger with a thin layer of absorbent cotton and saturate the latter with 95-percent alcohol, then drawing a rubber finger-cot over the alcohol-wet dressing. This treatment has given extremely satisfactory results in my own practice and has been highly recommended by others. It often aborts the felon. Calcium sulphide, internally administered, acts synergistically with the bacterin-treatment.

Furunculosis (Boils)

To anyone who is going through the harrowing experience of a "crop of boils," any method of treatment offering promise of a speedy cure "sounds good." Such a sure

and speedy cure is easily obtainable through the use of two remedial agents, namely, stock combined staphylococcus bacterin (polyvalent) and calcium sulphide. The dose of the bacterin should be about 100 million of each variety of staphylococcus present in the bacterin, for the initial dose. The dose should be repeated every two or three days, slightly increased, if marked improvement does not soon take place. As the condition improves, the interval is to be lengthened to five or seven days. When the attack seems entirely past, a dose of about 500 million of the combined staphylococcus aureus, albus, and citreus should be administered at monthly intervals, until all danger of recurrence is past.

The calcium sulphide is to be given *to saturation*, as heretofore explained.

A local application that often gives considerable relief is cataplasm of kaolin applied "hot and thick," as we have so often been told.

When suppuration occurs, the pus must, of course, be evacuated. Sometimes this may be accomplished by aspiration, using a hypodermic syringe as aspirator.

These patients are usually benefited by the administration of a hematinic, such as the improved Bland's mass or the triple arsenates.

Attention is also to be given to the bowels, to get rid of autotoxemia. Here, the proper use of calomel and saline laxatives is indicated.

Fistulas and Sinuses

These conditions are mostly chronic in nature; hence, we should logically expect to find a "mixed infection" present; and this is quite commonly the case. The *Bacillus tuberculosis* is probably the most frequent *primary* invader; but soon the pus-group of cocci gain entrance, and a "mixed infection" is in evidence—so much so, oftentimes, as to conceal the real primary invader.

The nature of the bacterial flora will depend considerably upon the surface upon which the fistulous tract opens or the cavity with which it connects the external world. For example, false passages communicating with the lung or pleural cavity are commonly infested with the *Bacillus tuberculosis*, pneumococcus, streptococcus or the *Bacillus influenzae*; in those connected with or situated near the intestinal canal, we naturally should expect to find the *Bacillus coli communis*, *Bacillus proteus vulgaris* (group), and the pyogenic cocci; if the fistulous tract opens

upon the surface of one of the extremities, then the staphylococci and streptococci are likely to be the invading germs.

If possible, a microscopic examination, at least, of the discharge should be made, so as to determine the nature of the offending microorganisms. Then the appropriate bacterin may be selected intelligently. Oftentimes, in these cases of an essentially chronic character, autogenous bacterins will be indicated; however, resort should first be had to the polyvalent stock preparations, for usually they are efficacious if they contain the essential organisms.

In the bacterin-treatment of these fistulas and sinuses, there is constantly a tendency to close at the outside, only to break down later. One should make sure always to pack the fistulous tract lightly with a wick of iodoform-gauze, so as to have the tract close *from the bottom*.

Again, owing to the characteristic chronicity of these cases, it will generally be found, in old cases, that the tract is surrounded by a dense "pyogenic membrane," or wall consisting of leukocytes, coagulated fibrin, and cellular detritus. This may with profit be removed by careful curettage. Then pack with gauze saturated with citrate solution, to facilitate the outflow of antibody-laden serum.

If a foreign body exists, such as (in osteomyelitis, for example) a sequestrum of bone, we naturally do not expect the administration of a properly selected bacterin to effect a cure until we have first removed that foreign body. This fact is too often overlooked and, thus, bacterin-treatment is unjustly charged up with failure.

Where, after the infection has been overcome by proper bacterin treatment, the fistulous tract shows no disposition to close, it can be stimulated by packing with a narrow strip of iodoform-gauze dipped in balsam of Peru. These being chronic conditions, the bacterins will be employed in fairly heavy dosage, at comparatively long intervals of from a week to two weeks and extending over a long period of time, perhaps several months or even a year or more.

The initial dose of the streptococcus, pneumococcus, and *bacillus coli* should be from 30 to 50 millions; that of the various staphylococci about 100 millions of each variety present.

In these cases, owing, again, to their chronicity, anemia is very prone to be a concomitant factor. In such a case, the triple arsenates are indicated. If the case be

tuberculous, then codliver-oil undoubtedly is of value. Made into an emulsion with fresh eggs (both white and yolk) and flavored with a small quantity of methyl salicylate, it is quite palatable.

In writing upon the treatment of fistulas and sinuses, one must not forget the "Beck treatment," that is, a paste composed of bismuth subnitrate and petrolatum, sterilized, injected under moderate pressure into the tract. This method of treatment has sometimes effected a cure when all else had failed.

Impetigo Contagiosa

This infection is due to the streptococcus or to the various staphylococci, especially the staphylococcus aureus. The dosage of a bacterin is from 30 to 60 million streptococci and 50 to 100 million staphylococci for the initial dose; which may be increased somewhat if speedy improvement does not ensue. The interval should be from four to seven days.

As to local treatment, I remove the crusts and blebs and paint the affected surfaces with full-strength tincture of iodine. In this way, the spread of the infection is soon stopped. I then give the patient a small quantity of the same tincture, with instructions to open each vesicle or bleb as soon as it appears and paint the raw surface with the iodine. In chronic cases, it is often advisable to prescribe an ointment containing iodine ointment, U. S. P., and balsam of Peru, 1 dram of each, zinc-oxide ointment, 6 drams; this to be applied freely, once or twice daily.

The patient should, of course, be informed as to the infectious and autoinoculative nature of the disease, and warned against scratching with the finger-nails.

Calcium sulphide and quite often the triple arsenates are the indicated remedies for internal administration.

Sycosis (Barbers' Itch)

It was in this particular class of cases that Almroth Wright scored his first notable successes, and it was his unvarying good results in these stubborn infections which encouraged him to go on and further develop and broaden the field of bacterin-therapy.

The disease consists in an infection of the hair-follicles of the beard by the Streptococcus or the Staphylococcus aureus and is exceedingly resistant to treatment by ordinary means. I well remember that our professor of dermatology cautioned us to tell our sycosis-patients that, while we could cure them, it would in all probability take six months

to accomplish this much to be desired result.

The dose of bacterin and the interval are about the same as those given for furunculosis and eczema. Epilation and local hot citrate fomentations are measures of value.

Calcium sulphide to saturation is advisable as internal treatment.

Ulcers

The bacteriology of ulcers covers a wide range of microorganisms. Many ulcers are either tuberculous or syphilitic, primarily; but these soon suffer secondary invasion by the members of the pyogenic group of bacteria. Other ulcers may be the result of an aggravated case of varicose veins, a slight trauma often being sufficient in these cases to cause the devitalized tissues to break down, with the consequent production of an ulcer.

In any case of chronic ulcer, a combined bacterin containing the various members of the pyogenic group should be administered, for overcoming the secondary infection. The affected part should be put in that position which is most favorable to promote the circulation, that is, somewhat elevated, especially when the ulcer exists upon the lower extremity. Citrate dressings should be applied, to promote the outflow of lymph. When the floor of the ulcer presents a thick layer of indolent granulation-tissue, careful curettage is indicated.

In syphilitic ulcers, it is self-evident that systemic treatment is demanded; the local condition will not greatly improve until the underlying disease is overcome. For local application, calomel or the oldtime black-wash are time-tried remedial agents of great value.

In the case of tuberculous ulcers, one must again depend to a great extent upon the treatment of the underlying condition. This treatment consists quite largely of proper hygiene and diet.

In varicose ulcers, an elastic bandage is of great utility.

In the case of any ulcer, after the pyogenic infection is controlled by means of bacterin-therapy, the application of local stimulating remedies is in order; the most useful of these being silver nitrate, balsam of Peru, and scarlet-red ointment. Ofttimes, painting the ulcer with tincture of iodine is of benefit.

Chancroidal ulcers yield to cauterization with nitric acid carefully applied on a glass rod, and followed by copious dusting with

iodoform or other iodine-containing dusting-powder.

In old ulcers of the shin that do not show a willingness to heal after the use of bacterins, curettage, and the local application of one or more of the stimulating remedies named a short time ago, skin-grafting may become necessary.

To secure a successful result from skin-grafting, the infection must first be overcome by the use of bacterins, possibly curettage to remove lowgrade tissue, the application of stimulating substances, to promote the formation of healthy granulations; the grafts, when placed, must be held absolutely immovable until they become firmly attached; and provision must be made for the taking up of such serum as exudes, without disturbing the grafts. A light, easily sterilizable rubber-netting is obtainable that will hold the grafts firmly in position and at the same

time permits a free escape of serum, to be taken up by sterile gauze applied outside the rubber-mesh material.

The grafts need not be large; I like to make them about the size of the head of a small finger-nail. They may be placed about one-fourth to one-half inch apart, depending upon the size of the surface to be grafted and the willingness of the donor of the grafts to furnish either a considerable number of them or only a few. The patient must be kept at rest in bed, with the leg elevated upon pillows, until the grafts have firmly taken hold and cutification is well under way.

This completes our consideration of the bacterin-treatment of the more common diseases of the skin and subcutaneous tissues. In our next chapter, we shall take up the treatment, by means of bacterins and synergistic remedies, of diseases of the bones and joints. *[To be continued.]*

Rocky Mountain Spotted Fever

By DEWITT P. HEIGGS, M. D., Fairfield, Idaho

EDITORIAL NOTE.—This disease is of so much interest to physicians practicing in the Rocky Mountain states that we hope Doctor Heiggs' paper may be carefully read and discussed freely—especially from the standpoint of diagnosis and treatment. We call special attention to the paper by Dr. Charles S. Moody, published in December, 1915, page 1102.

ROCKY MOUNTAIN spotted-fever, —also variously known as Rocky-Mountain tick-fever, or simply, tick-fever, black fever, spotted-fever, and blue-disease—is an acute infectious disease of man and is characterized by a sudden onset with a chill, followed by continued fever, intense headache, severe pains in the back and back of neck, general muscular soreness, and a macular eruption, becoming petechial, which appears first on the ankles and wrists and later spreads to all parts of the body.

The history of this infection is somewhat interesting. It has been known in the Bitter-Root Valley of Montana for over forty years. The first recorded cases occurred in 1873, though it is probable that there occurred a few cases even before that. By this time, this disease has become endemic in the Bitter-Root Valley and also in the elevated vallies of Idaho, Utah, Wyoming, and Oregon. It appears in the spring and early summer months.

The Etiology

Among the predisposing causes, the following may be mentioned: Season, from March

to August, the most cases occurring in May and June. Sex: male in the ratio of three to one female, the difference being due to occupation. Occupation: those whose work takes them to the sage-covered plains and those who work in the mines and timber, sheepmen being especially liable to contract the disease. Age: no age enjoys immunity, though the most of the cases are found in individuals between the age of twenty and forty years. Previous attacks seem to confer permanent immunity, though in eight years' practice I have had two patients who gave an undoubted history of having had the disease, one of them six and the other eight years before.

The exciting cause does not seem to be definitely known. Wilson and Chowning, in their report, said that they found in the fresh and stained blood bodies which they held to be hematozoa, and which they named *pyroplasma hominis*; however, later investigators, as Stiles, King, Ricketts and others, failed to substantiate these findings. During the season of 1915, I examined four fresh and fourteen stained specimens of blood taken from patients in every stage of the disease and

in two cases found an opaque rod-shaped body about one-third the length of the diameter of a red blood-cell. I doubt whether this was a causative factor of the disease. A short time ago, I read in the newspapers that someone in Utah claimed to have found a definite organism causing this disease, and I hope investigation will verify this; but, till this is done or further investigation reveals something more definite, we shall have to assume that the cause of Rocky-Mountain spotted-fever is not positively known.

Its transmission by the tick (*dermacentor andersoni*), male and female, is demonstrated beyond a doubt by several investigators, as Ricketts, Maxey, McCalla, and others. In my own practice, I have found 97 percent of the patients to give a history of having been bitten by a tick between five and twelve days before the onset of the disease, but also I have had a few who positively denied having been bitten by a tick, and in whom a minute inspection failed to reveal a tick bite. This led me to believe that some other suctorial insect might convey the disease and whose bite left but little abrasion on the skin. But the fact that we find the tick bite in almost all the cases and that the season of the disease corresponds with the tick-season will serve to place the blame on the tick as the carrier of the germ. It is definitely settled that the tick does not act as an intermediate host, its role being purely mechanical.

The Pathology

The skin shows at first a macular eruption, which later becomes petechial and on dependent parts may become confluent. In severe or fatal cases, there may be marked evidence of extravasation in the rete mucosum, especially of the thighs and hips. There is in some cases a velvet-like appearance of the cheeks, and in most cases there is evidence of a recent tick bite, situated usually on the ankle or in front of the leg just above the ankle.

Investigators say that *post mortem* inspection reveals the cortical and spinal meninges to be normal or but slightly hypostatically congested. The same condition was found in the lungs; the heart was flabby and friable, with small petechiae beneath the epicardium. The gastrointestinal tract appears normal. The liver is enlarged and shows fatty infiltration. The pancreas and spleen are enlarged. The kidneys are enlarged and red in every case and there may be small hemorrhages into the pelvis; the cortex swollen but not adherent, the pyramids red and sharply

defined. The microscope shows general cloudy swelling.

The blood of the patient shows a diminution in the red cells as the disease advances. The hemoglobin also is diminished but not to the extent of the red corpuscles. The leukocytes are said to be normal or nearly so, but I found in fourteen cases an average of 12,500, the highest being above 25,000; the small lymphocytes being relatively increased. Late in the disease, I found a few megaloblasts, and in one case, where the patient was above fifty-five, there were a number of poikilocytes late in the disease.

The Symptoms

The incubation-period is from three to ten days or, in some cases, a little longer, during which time there is increasing malaise, with pains in the bones and muscles, especially of the back. One of the first things complained of by the patient is, a stiffness of the wrists and ankles. The onset is usually announced by a chill, which may be severe. There may be nausea. Severe headache and backache are usual, bowels are constipated, the tongue is furred. Often the skin has a yellowish hue and in some cases there is marked jaundice. Nosebleed is common during the second week.

The temperature rises rapidly after the initial chill, reaching 104 degrees or higher, and stays quite high until about the tenth day, when in favorable cases it slowly declines very much, as does a typhoid-temperature. In very severe or fatal cases, it may reach 106 or 107 degrees about the eighth or tenth day. The pulse usually is high, 110 to 140 in average cases. Full and strong at first, it becomes weak and thready as the disease progresses. The respiration is increased being from 36 to 40 per minute. Bronchitis is common, pneumonia a frequent complication. The digestive system shows but little disturbance as a rule, though late in the disease there may be some nausea and, in severe cases, persistent vomiting. Enlargement and tenderness both of liver and spleen appear early. The urine is scanty and highly colored, with a trace of albumin, and often containing granular and blood casts. The nervous symptoms often are quite marked, but not at all alike in all cases, some patients showing marked irritability, pain and hyperesthesia and often photophobia, while others, especially severe cases in old people, show delirium of the low muttering type. Coma usually precedes death.

The rash appears about the third day, is first seen on the ankles and wrists, then

spreads toward the trunk, the abdomen being the last place for it to appear. The eruption is thickest on the back and thighs and fewest on the abdomen. When it first appears, it consists of bright-red macules, and disappears on pressure: the spots are discrete and about 1 to 6 mm. in diameter. As the disease progresses the macules become darker and petechial and reach their fullest development about the eighth or tenth day, the spots becoming confluent over dependent parts. With the decline of the fever, the spots fade, leaving a dark stain in the skin, the stains persisting for some time. A warm bath will bring them out during several months, in some cases. Desquamation begins when the convalescence is well advanced and is quite marked on the hands and feet. Convalescence usually begins the third week and is quite slow, and in most patients above fifty years of age it may take months to fully recover.

Complications and Sequels

Gangrene of the skin over the toes, fingers, scrotum, and penis is sometimes seen. Lobar pneumonia is a frequent complication. Cystitis is common. Heart exhaustion must be watched for.

Among the sequels of the fever these may be mentioned: Nephritis, usually transient. Heart lesions, which tend to persist for months. Blindness in one or both eyes is a rare sequel due perhaps to the eruption occurring along the optic nerve or in the nerve-sheath. A suicidal mania sometimes appears late in convalescence. I have known two cases of suicide, and this leads me to believe that there may be more meningeal involvement than is usually supposed.

Diagnosis and Differential Diagnosis

The diagnosis is made from the mode of onset, the season, the history of a tick bite, the knowledge that the disease is endemic in the locality, and by the eruption, which is characteristic.

There are but few diseases that are likely to be confounded with this one. Early, it might be mistaken for typhoid fever, influenza, rheumatism, and smallpox, but the time of the year and absence of the Widal reaction would serve to differentiate it from typhoid fever. Influenza shows nearly the same prodromes, but the history of a tick bite would serve to differentiate here. In rheumatism, the history of previous attacks, together with the absence of a tick bite, would make the differentiation easy. Small-

pox resembles this disease somewhat in the early stages, but the absence of an epidemic and the history of a tick bite would serve to show that it is spotted-fever. Later, typhus fever might be confused with it, but the locality and the endemic history of one and the epidemic character of the other would make the differentiation quite easy.

The prognosis of this disease depends upon location, age, season, and altitude. In the Bitter Root Valley of Montana, the mortality is very great, going as high as 80 percent some seasons, while in Idaho and some of the valleys of Utah the mortality is less than 4 percent. It is very much more fatal in people past middle life than in young adults, while in children it is very mild, as a rule. The earlier summer months show the greatest mortality, and it seems that the higher altitudes give a lower death rate than do the lower altitudes.

Treatment

There is no specific or established serum treatment as yet. So the treatment is largely symptomatic, indefinite as that term is. An outline of the course of treatment which has given very good results in my hands is about as follows: variations according to conditions, of course:

For the early soreness, I usually give the salicylates or aspirin. We usually employ a little calomel at the beginning of the disease and follow this with a mild laxative saline, and repeat the saline every other day for the first few days and as often after that as it seems required. For some time, we give a small dose of belladonna, to hasten the rash. We examine the urine every few days, and give the indicated remedy. For the fever, aside from the salicylates, we sometimes employ the vegetable antipyretics, and during the height of the fever we sponge the body with alcohol or a mixture of equal parts of alcohol, aqua hamamelis, and water. In the later part of the disease, we give 1-40 grain of strychnine every four hours, to sustain the heart. The delirium we treat with alcoholic sponging and the ice-cap to the head, and sometimes we give a few doses of the bromides; though we do not follow this as a routine and would especially caution against the free use of the bromides in this disease. The sponging as above is of great benefit late in the disease, as it helps to keep up the heart's action and the strength of the patients, and they always tell you how much better they feel after the sponging. Other symptoms should be treated as they arise.

During the convalescence, a good tonic is needed here, the same as after any other exhausting disease. The diet should be light, yet sustaining. Buttermilk serves well as a food, is well borne by the stomach, and is very grateful to the patient. Convalescence should be watched carefully and any complication or sequels promptly recognized and combated.

I will add that this disease is becoming more widely distributed over the north-west, and we hope for a means of limiting it as to locality and, finally, a means of stamping it out altogether. And the interest taken in this work by the government and private workers will accomplish this in time, I am sure. We are also hoping for a more rational or specific treatment soon.

A Study in Collections

By F. L. EDMAN, Argos, Indiana

FEW tasks in any line of business are more annoying or disagreeable than the converting of long-standing accounts into cash. It is one of the easiest things in the world to let a person get deeply in debt to you—much easier than insisting on prompt payments. But when the amount owed begins to assume serious proportions and the debtor still fails to come across—then what?

If it were possible always to play safe, in all cases giving yourself the benefit of the doubt, the number of your bad accounts would be substantially diminished. However, even then they could not be eliminated entirely; for it frequently happens that a man whose credit has always been above reproach for some reason falls into the slow-pay class, which is the first step toward making him a doubtful risk.

Now, what causes a man, once honest, to become careless and indifferent about his honest debts, even to the point of trying to sidestep them entirely? In practically every instance, the man who swerves from the paths of honesty does so because payment of his accounts means working a hardship on himself. It has been discovered that the majority of such offenders are married men. While single, with no one to support but himself, the average man experiences little difficulty in meeting his few obligations as they come due; but, unless he has accumulated a considerable sum or has an exceedingly large income, he is liable to find pretty tough sailing for at least the first year or so of his matrimonial career.

With a lot of unlooked-for expenses, the married man soon becomes all but submerged in the quagmire of debt. There are so many demands on his money that it seems almost impossible to make any appreciable progress toward paying his bills. His creditors become impatient and begin to push for settle-

ment. In time, he becomes discouraged and resentful. He defers payment in all cases just as long as possible; and, of course, the longer any debt runs the harder it is to pay. At last he succeeds in wearing out one of his creditors, who gives the account up as lost and ceases to bother him about it. By and by, after a few more obligations are sidetracked in this manner, the debtor's conscience becomes so calloused that debt-dodging seems almost legitimate.

Few men of the medical professions have gone into the collection-problem deep enough to discover the most effective means of getting the money, although it must be recognized as a vitally important thing to be considered; for, no business can long exist without adequate working capital. Ordinarily, physicians send out statements once or twice, and to those who fail to respond they then make perfunctory appeals through letters or personally.

It is a wanton waste of time and labor to send out collection-letters that are gotten up in a haphazard, loose-jointed manner. Simply calling the matter to the debtor's attention is not sufficient when it has reached a point where a letter is necessary. Considerable thought must be given to construction. The whole thing must be worked out with great care. The viewpoint of the debtor must be considered—the possible reasons why he doesn't pay anticipated, and argument produced that will offset all opposition.

A surprisingly large number of almost any physician's bad accounts can be collected without even antagonizing the debtor if the proper method of approach is used. The average slowpayer is not entirely devoid of honor, and it has been proved that many who are absolutely bluff-proof and execution-proof will "come across" with the money when appealed to in the right manner.

vomit, when I do have such patients; some of whom die and some getting well, probably about as they would come out without any medication. Someone will yet discover the appropriate antifebrin for yellow-jack, and then all the world will wonder why it was not known all the time. I cannot even try to guess what this preparation may be—I have no genius for discovering that important antidote. Still, it is much to suppress these epidemics—indeed, really better than a cure, were this possible in the backwoods, among the jungles and bogs of tropical wilds.

I know of no cure for well-developed small-pox, and I hope ever to combat that dreadful pest by preventing its development.

While some of the important substances I have named were not known to Galen, they are, withal, an acquisition in improved medication. Whenever there is to be had the active principle of any galenic substance among those not named by me, if I require its service, I am likely to employ it about the same as anyone else would use the standard preparation, in the same place, except that my treatment would be positive, and administered in broken doses equivalent to what the misguided brother would imagine he was administering in full dosage. I should be certain of my dosage and its potency, while it would be half random guesswork with the crude standard preparation.

Burgess' Wonderful Magnesium-Sulphate Solution

Epsom salt, as intimated earlier in this account, has been enshrined and crowned by Doctor William H. Burgess, an old confederate surgeon who once was within the radius of my eye, ere he was aged and gray and I was not yet estranged utterly from earthly hope, the lone survivor of all those who wore the luckless gray personally known to me, be it in intimate association or in mere passing association—a reminiscence amply sad to make this flickering lamplight illuminating this sheet burn bluer than its wont ere the spectres of the still and solemn hour obscure the pale rays with the dim shadows of their sable wings.

These weird repinings—or what you will—heaven knows how earnestly I have struggled to relegate them and their inspiring causes to the fathomless depths of oblivion. Yes, I have found surcease from their pursuing menace for uncertain seasons, till they come again softly stealing back upon me, over the lapse of years, over the breadth of the world, over the sods of the grave. This life, reft

of hope and alienated from any kind, not enthralled in the woes of sick life, must be more intense and thrilling than that of those who have hopes not perished and loves not dead. But—but—whither is Doctor Burgess, the romance of a dead time and dead ideals, leading me? Let me not drift away from the thread of the story connecting my old, now dead, friend Burgess and his splendid magnesium salt therapy.

When I first read the propaganda of that new faith of the old surgeon, I pondered a long time, trying to imagine from what fairy tale he caught the gossamer drapery of his fantastic disquisition. Yet, this saline had the redeeming merit of at least being innocuous in external applications, exactly where it was to work its wondrous miracles. I was sadly in need of an auxiliary able to serve me in the way the flowery literature of Burgess so liberally proffered me helpful aid. A peseta in Mexican coin would quickly solve the problem. Doctor Burgess surely either was a cheap John or else a noble philanthropist. He in no wise hinted at remuneration, nor suggested that one prove, and then pay if results were satisfactory. He was modestly retiring for a discoverer of a precious panacea for human ills.

I made up a jugful of the solution. The woods were full of suitable afflictions for making tests. I sent bottles of the solution, with directions for use, to a number of suitable cases. In a few days, several of the patients put in appearance to ask for more of that medicine that had done them more good than a muleload of any ever tried before. And thus the reports continued to come. I used the solution in all painful conditions, inflammations, bruises, erysipelas, rheumatism, and eczema, with cheering success. But, that the reader may not imagine that I wish to show partiality to Doctor Burgess because we were in the shipwreck of the Lost Cause, I am going to quote from Doctor George Roberts, of Lincoln, Virginia, a rather below fair sample of what I have seen reported by scores of other doctors. This is what he writes:

"Doctor Robinson is evidently a follower of Doctor Burgess. Let me say that within the past year I have used and prescribed very near a barrelful of epsom salt, and the only trouble is that the patients get well so quickly that the doctor does not make enough out of his practice to provide for his family as he should. The epsom tub-bath and sponge-bath are the greatest therapeutic measures known. Adopting Doctor Burgess' methods,

there is nothing impossible, curing obstinate diseases in three to four weeks, when the patients were given up to die. Paralytics turned out of the big hospitals as incurable are greatly improved.

"It seems hard to believe, but these are facts which I have demonstrated, and Doctor Burgess deserves a monument higher than Washington's. I am not one to scatter flowers on a dead man's grave, but give him his tribute while alive.

"I never tell a patient what I am using, but color my epsom salt for the bath with a little carmine, making it a delicate pink. They never saw a drug like it in any store and are willing to follow directions. They would laugh at the idea of epsom salt, as some doctors will at what I have written."

I have here, somewhere in the office, in the London *Lancet*, a report of 700 cases of erysipelas, in every stage, treated with epsom salt, with thrice the cures ever attained with any other medication, early relief being experienced in every case; while the few who died had their sufferings appreciably modified. The death rate under this treatment was far below that from any other ever recorded from such a large number of promiscuous patients.

The solution is a valuable adjuvant in dropsical treatment, the swollen parts being sponged and the feet bathed with it as hot as can be tolerated.

I have had great success in the treatment of dropsy with anascarcin, an American proprietary preparation. This never fails me.

Those Predatory Bandits

If there is a possibility of putting information in an autobiography serviceable to a reader, it must be in divulging something out of current medical walks and likely to be turned to useful account. Some of the items I am jotting down would never have been in my experience in another more congenial practice. Stern and urgent necessity has actuated me to prove out many things to a finish that I never would have taken under consideration in pleasant fields of cheerful life. I do not thus refer to financial want; for, I am a stranger to gaunt and gnawing poverty, save for brief seasons after having been cleaned up by bandits—as has happened twice in my tropical pilgrimage—although I never was hungry in consequence of such ungenerous fleecings.

And now, although it seems that oil has been flung on the troubled waters between

the United States and Mexico, the peril here is greater than at any time since the inception of hostilities. While the outlaws are not in the immediate neighborhood, they can arrive any night whenever the federals are temporarily absent. The native people are in great terror, as other towns have been recently burned, and even bedding and clothing carried away. Probably I should not fare very prosperously in their hands and might be left without a house, if not without a head on my shoulders. Yet, all this makes a bridge to be passed when we reach it, all being within problematic possibility.

How Cactus Came Out Victorious

In recent years, I have said so much about cactoid (formerly known as cactin—the concentration of *cactus grandiflorus mexicana*) in medical journals that it seems superfluous to dwell elaborately on the substance here. It may be said to be glonoin of slower and less energetic action, being useful in feebly functioning heart, and to relieve arteriole congestion, which latter is often indicated by superficial cold and clammy skin through inaction of the pores, with excessive trunkal and cerebral heat. Cactoid may be employed for an almost indefinite time. I have used it for six months in anemic patients, with unvarying benefit. But, after the American Medical Association, through the medium of the Council of Pharmacy, put the substance under the ban, as worthless trash, I desisted from making reference to it, although continuing its use with increasing constancy. Finally Professor Lloyd, of Lloyd Brothers, Cincinnati, came along with a startling announcement that he had sent out circular-letters to thousands of doctors, requesting them to report what medicines, they employed most frequently, and in this way found that *cactus grandiflorus* headed the list as the medicine most frequently used by American doctors. This conclusively proved that the condemnation of the Council had not frightened the profession to abandon a meritorious remedy, which nothing else could replace in their *materia medica*.

For some two years I had supposed that cactus was relegated to the demnition bow-wows by the American medical profession and that I was the only one of the browbeaten fraternity so stupidly stubborn as to continue its use. And now I am again lauding the intrinsic merits of cactoid in the medical journals whenever it happens to get into the kinks of my meditation when writing to them.

[To be continued.]

Abortive Poliomyelitis

A Type of Acute Epidemic Poliomyelitis

By PHILIP A. E. SHEPPARD, M. D., Boston, Massachusetts

THE abortive form of poliomyelitis cannot be regarded as an accidental occurrence in the epidemic expression of infantile paralysis, for it has been amply shown by many observers, and it is my own experience, that suspicious coexisting illnesses do occur in association with frank cases of poliomyelitis, and that, in a good many instances where a tentative diagnosis of abortive poliomyelitis was made, motor disturbances of varying degrees have later appeared.

In this paper the point is not so much to establish the actual occurrences of abortive cases but as far as possible to indicate the varying expressions of this type of the disease, the best means for detecting them and the therapeutic measures that should be tried in all of them.

At the outset it is safe to say that abortive poliomyelitis is a form of acute epidemic poliomyelitis in which paralysis does not occur.

In my experience as special medical investigator of the Massachusetts State Board of Health I have estimated that for every reported paralytic case there were at least two or three cases of the abortive type, and I found, further, that the manifestations of this nonparalytic form of acute epidemic poliomyelitis varied anywhere from a slight illness, with no motor disturbances, to a quite alarming illness in which motor disturbances seemed to threaten but did not develop.

The question naturally arises in one's mind whether or not this so-called abortive form is the more general type, and whether the more clearly defined paralytic forms constitute the atypical types.

We are safe to assume that it is possible, even probable, that acute epidemic poliomyelitis is an acute infectious process which may or may not be characterized by definite motor disturbances sometimes resulting in paralysis.

If it can be granted that this hypothesis affords a solution of a difficult problem, then we are facing a situation of greater magnitude than has heretofore been supposed.

By laboratory means it has been shown that the serum of abortive cases contained immune principles, so that one feels justified in

saying that acute infections not otherwise classified among the known infectious processes, and occurring during the seasonal expression and in the epidemic zone of poliomyelitis, may safely be regarded as acute epidemic poliomyelitis and treated as such until it can be shown to be otherwise.

The Recognition of Abortive Forms

Briefly, in this form of the disease there are found.

1. Cases that run the course and assume the character of a general infection.
2. Cases in which the leading symptoms are those of a meningeal irritation.
3. Cases characterized by much pain, "influenza-like" attacks.
4. Cases with well marked gastrointestinal disturbances.
5. Cases with upper respiratory troubles such as throat and bronchial affections.
6. Cases that simulate gastroenteritis or some other intestinal disturbance.

The problem of diagnosis is not such a difficult one for the clinician who will bear in mind these few types when called to a case in which he does not find the earmarks of any known infectious process sufficiently marked, especially when the case is encountered in a locality where acute epidemic poliomyelitis prevails, or occurs in a family where an undoubted paralytic case of the disease already exists. In any event, a tentative diagnosis should be made and the case closely watched.

Prodromal Symptoms

A further aid to diagnosis is vouchsafed to the observant practitioner if in his cases any of the following prodromal symptoms present, e. g.: (1) Irritability; (2) restlessness; (3) pain along the spine or in the extremities; and (4) apathy.

Now the diagnosis may with reasonable certainty be clinched, and the only safe precautionary measures are (1) to place the case under strict quarantine and very careful observation and (2) to confirm the diagnosis wherever possible by laboratory tests.

It would be of great benefit, in the solution of all our difficulties, if this form of poliomyelitis were taken more seriously. I firmly believe that it furnishes us with the missing

link, so to speak, in the chain of evidence of the transmissibility of this disease.

Important Symptoms During the Acute Stage

The following list of symptoms, varying greatly in degree and kind, are generally present in the majority of these cases. For brevity's sake I have placed them in a table.

1. Fever, 100°-106° F. (duration 2 to 7 days)
2. Vomiting
3. Restlessness
4. Apathy
5. Rigidity of neck
6. Headache (frontal)
7. Delirium
8. Stupor
9. Convulsions
10. Photophobia
11. Dysphagia
12. Sluggish pupils
13. General pain (early in 58 percent)
14. Absence of deep reflexes
15. Cold extremities (vasomotor changes)

I will add another table, in this connection, elaborated from a series of 198 cases that came under my observation, and which I worked over very carefully. This table will show the relative frequency of most of the symptoms given in the preceding table, with some additions.

<i>Symptom</i>	<i>No. of Cases</i>
Fever.....	198
Pain and tenderness.....	184
Brain symptoms.....	117
Headache.....	106
Retraction.....	79
Sore throat.....	59
Apathy.....	24
Delirium.....	19
Rigidity of neck.....	18
Cough.....	13
Irritability.....	13
Tired condition.....	9
Rigidity of spine.....	9
Lassitude.....	8
Strabismus.....	7
Change of T.....	6
Diaphragmatic breathing.....	6
Dysphagia.....	6
Sweating.....	5
Irregular pulse and respiration.....	5
Twitchings.....	5
Diminished or absent reflexes.....	5
Convulsions.....	4
Nystagmus.....	4
Anorexia.....	3
Weakness.....	3
Hyperesthesia.....	3
Stupor.....	3
Exaggerated reflexes.....	3
Regurgitation of food.....	3
Anxious expression.....	2
Tremor.....	1
Coma.....	1

Tympanites.....	1
Insomnia.....	1
Hiccough.....	1

With these facts and suggestions in mind (and realizing that the diagnosis must be made on general principles, mostly by a process of exclusion, plus whatever positive laboratory signs are available to us), I believe the diagnosis of abortive cases will be made earlier in the course of the infection, more frequently, and with greater certainty.

Since in a majority of cases a history is obtained of intimate contact either with an acute case or with a third (healthy) person who had associated with such a case, the weight of evidence points to the infection being a transmitted disease, and it should be handled as such. Instances bearing on this phase of the disease are being elaborated in another paper to be published later.

Incubation Period

The prodromal stage may occupy a period of a few days to a week.

Treatment

During the prodromal stage: Keeping in mind the etiology, enforce strict quarantine measures, screen the room, and remove all unnecessary furnishings. Now put your patient in bed and detail a special attendant.

In all forms of the atypical disease, start by opening the bowels, first cleansing the lower bowel with a small rectal enema consisting of 4 ounces of each glycerin and hot water. This secures an evacuation in about two to four minutes; I have never known it to fail. Give a tablespoonful of a mineral oil emulsion night and morning. Run in a laxative saline fifteen minutes before breakfast on the first day of the suspicious illness. Keep the patient in a comfortable bed to insure relaxation of muscles.

If gastrointestinal symptoms predominate, feed the patient on a diet of milk which has previously been treated with bacillus-bulgarius cultures. Care should be used that a reliable and vital culture be employed in this method of treating the milk. My method is to bring the milk to the boiling point, in a double-boiler, holding it there for thirty minutes; this insures the destruction of pathogenic organisms. Separate the boiler, cool the milk quickly to 90° F. and the water to 100° F. Add the culture, set up double boiler again, wrap in a blanket, keep in a warm place until the milk has junketed, then place in ice-chest, where it should remain until consumed.

If constipation is present, use the whole milk thus treated, and if diarrhea complicates the case remove the cream and use only a fat-free bulgarian-bacillus-treated milk.

As the patient recovers, cautiously add other suitable articles of diet depending upon the age of the patient, but be sure that everything is boiled.

Keep the mouth and teeth clean—particularly if throat and mouth symptoms predominate. Spray the throat with hydrogen peroxide in 1-10 dilution. Clean out the nares with a like solution; use these measures several times during the day.

Another thing worth while is to swab out the throat with a bouillon culture of the bacillus bulgaricus full strength—then use a

gargle twice daily containing the same organism in the dilution of a teaspoonful to the pint of water at 85° Fahrenheit. Hexamethylenamine, 5 grains to a tumbler of water, may be given once or twice a day.

For the rest, use good judgment and treat symptomatically until research has triumphed and we are given a specific serum. May this be soon.

In conclusion I feel justified in saying that, with the wealth of evidence on hand, *it is possible* to make a positive diagnosis in abortive cases of acute epidemic poliomyelitis and that, by treating such cases along the lines I have endeavored to set forth, we may reasonably hope for measurably successful results.

Syphilitic Nephritis

With Some Suggestions for Its Treatment

By M. W. THEWLIS, M. D., Wakefield, Rhode Island

A YOUNG man consulted me for a chancre. This went the usual course and was followed by the secondary symptoms. Four months after contracting the primary lesion, he began to complain of severe headaches and puffiness of the eyelids appeared. One night, while talking with friends, he was taken suddenly with coma, which rapidly became deep. He remained in this condition for four days. The urine showed a normal urea test, a slight trace of albumin, and some hyaline casts. A diagnosis of syphilitic nephritis was made.

The patient was put on a course of arsenic trioxide, 1-100 grain every three hours. He also was given a strict milk diet, and was kept in bed for five weeks on this regimen. At the end of this time, cereals were added to the diet and eventually vegetables. Three weeks from the onset of the attack, albumin appeared in abundance in the urine and granular casts were very numerous. At the end of five months, he had recovered sufficiently to enable him to resume his work.

Six months from the beginning of the first attack, the man was again taken with kidney symptoms and was obliged to give up his work. Ordered to resume the milk and cereal diet, he again recovered in four weeks, and has remained in good condition ever since. He has taken protoiodide of mercury constantly since the fifth week of the first attack. It is now three years from the first attack, yet, withdrawal of the mercury or a change to

any other remedy will immediately bring on again symptoms of renal irritation.

This case represents a toxiinfectious nephritis brought on by syphilis, following the secondary manifestations, and constitutes the early form of the disease. It is the same type of nephritis that may supervene as a complication of scarlatina, smallpox, pneumonia, influenza or erysipelas. The syphilitic toxin is capable of causing much destruction to the renal tissue and may assume a very malignant form, as in the case under consideration. The nephritis of syphilis may come early in the course or may appear late as a tertiary manifestation. Ordinarily when it comes in the course of syphilis it would be attributed to the use of mercury. However, a study of workers in this metal would show that they rarely have any kidney irritation, except in acute mercurial poisoning, in which case death may come from anuria, the result of nephritis. Workers in lead may show a nephritis, but those who work with mercury do not have any impairment of the renal tissue as a result of the metal. Moreover, in this case of mine, mercury has been the remedy employed constantly, while, whenever any other form of treatment was substituted, albumin and casts reappeared in the urine soon after, together with other symptoms of nephritis.

Usually there is no warning by minor symptoms of Bright's disease. In fact, attacks of headache, puffiness of the eyelids,

and albuminuria will be the only manifestations of an incipient syphilitic nephritis. In the present instance the kidneys were at fault, and, yet, there appeared no microscopical evidence of marked abnormalities in the urinary sediment until three weeks had elapsed from the onset of the attack.

This seems to apply to many forms of acute nephritis. A sudden onset, without warning, except by headaches, is the usual picture of this disease. It is often overlooked, because at first the symptoms are all out of proportion to the urinary findings and may lead one to think that the kidneys are not the cause of the disturbance. However, it should not be forgotten that it may be two or three weeks before much microscopical evidence can be elicited.

There is no disease capable of causing any more malignant form of nephritis than syphilis, and it is usually a more serious complication than the nephritis of diphtheria, pneumonia or erysipelas. There may be a slight nephritis that may damage the kidneys to such an extent that the influence of some fresh infection may cause a most serious form of kidney inflammation. The condition must be watched for a long time, inasmuch as it frequently leads to a chronic form.

Treatment of the Early Form of the Malady

A milk diet is indispensable, although in the mild cases cereals may be added. My patient took three quarts of milk daily for five weeks, and he improved constantly. Arsenic trioxide, 1-100 grain every three hours, is used in the acute stage, while later mercury, in the form of the protoiodide, is given in daily doses of 1-2 to 1 grain. The arsenic preparations seem to act better in the acute and malignant forms than does mercury. Stokes* finds salvarsan or arsenobenzol to be the quickest method of treating syphilitic nephritis. It does not irritate the kidneys, unless given in too large dosage. He gives the salvarsan in doses of 0.15 to 0.2 Gram, later cautiously increasing to 0.4 Gram. However, he finds it advisable to follow with the use of mercury, in order to obtain lasting results.

As improvement takes place, one might be tempted to add more to the diet; still, usually when the disease improves, it is well to continue this strict diet for a sufficient length of time to allow a complete subsidence of kidney inflammation. If the condition recurs, it always is more difficult to overcome it.

While the early nephritis usually comes on after the disappearance of the secondary symptoms, the tertiary form develops several years after the primary lesion, and is, in fact, a gummatous condition of the kidneys resembling amyloid degeneration. The following case illustrates this form of syphilitic nephritis.

A woman, now forty-six years old, had contracted syphilis twenty years ago. She now has symptoms of brightism, such as headaches, dizziness, nervousness, dyspnea, and general subcutaneous edema. The reflexes are normal, this excluding locomotor ataxia. This chronic nephritis in no way differs from common Bright's disease, the urine containing much albumin and numerous granular casts. This woman's condition resisted ordinary treatment, whereupon I prescribed daily inunctions of mercury and, internally, 10 grains of potassium iodide taken three times a day. This treatment caused a marked improvement and cleared the urine of the abnormal findings. She is continuing the use of mercury and has been free from albuminuria for one year.

Diagnosis and Treatment of the Tertiary Form

It is very difficult to diagnose tertiary syphilis of the kidneys, because the condition does not differ essentially from the ordinary glomerulonephritis. If the patient has had syphilis or shows a positive Wassermann reaction, in addition to symptoms of brightism, we may assume that the nephritis is specific. The simultaneous appearance of gummata of the skin, tertiary ulcerations or osteoperiostitis would point to an accompanying nephritis.

Mercury is to be preferred to potassium iodide. Salvarsan, administered by intravenous injection, is to be recommended, the same as in the acute type. Obviously, it is necessary to watch the action of all remedies prescribed, because the renal tissue is weakened. Consequently, to bring about a cure, the treatment must, from time to time, be stopped and then again resumed.

Relapses are very frequent; hence, a careful study of the urinary sediment must be persisted in sedulously, in order to detect any deleterious action of the remedies, as evidenced by renal irritation. The diet should be the same as that prescribed in ordinary nephritis. It is very difficult to induce a patient to continue treatment after he feels somewhat improved, however, the danger of a chronic glomerulonephritis must be explained to him.

*Stokes, J. H.: *Journal of the American Medical Association*, 1916, LXVI, 1191.

Lobeline Sulphate

A Report of Some Animal Experiments

By G. R. BROWNE, D. V. M., Chicago, Illinois

THIS drug is the salt of the alkaloid of *lobelia inflata*, the fluid extract of which is valued so highly by the Eclectics in many pathological conditions, especially those affecting the respiratory tract.

The history of *lobelia inflata* is closely connected with the name of Dr. Samuel Thomson, the founder of the Thomsonian system of medicine, and it was brought before the public prominently during the numerous trials of the Thomsonians for murder and manslaughter.

The splendid results obtained by the use of lobeline sulphate in the conditions in which it is indicated, and the many conflicts of opinions regarding the value of the fluid extract of *lobelia*, impelled the writer, in conjunction with Dr. C. A. Zell, of The Abbott Laboratories, to conduct a series of animal and clinical experiments with lobeline sulphate to establish in our minds its toxic dose and its apparent action. In our previous experience, lobeline sulphate had not exhibited any of the toxic qualities of the fluid extract found objectionable by many authors.

Dr. Finley Ellingwood, in his recent work on "Materia Medica and Therapeutics," takes the stand that *lobelia*, used hypodermically, is not a nauseant expectorant and, while a sedative and antispasmodic, still exerts a stimulant action upon the patient and is not narcotic in the same sense that opium is.

Other authors, such as Cushny and Butler, are chary in recommending its use in any condition other than spasmodic asthma, claiming that the extreme nausea and depression resulting from its use, even in medicinal doses, render it undesirable and dangerous.

Sidney Ringer says that this drug is erroneously thought to be dangerous.

Hare, in his "Practical Therapeutics," says that *lobelia* is "equally praised and condemned."

Some careful experiments with lobeline were conducted by Edmunds to determine its physiological action. Some of his findings were most interesting, particularly as he clearly demonstrated that lobeline acts most powerfully upon the renal, vagus, and superior cervical ganglia, and that its action upon the inferior and mesenteric ganglia was deferred and not complete.

Edmunds also states that it was impossible for him to stop the heart's action with muscarine, after an injection of lobeline had been given, and that lobeline would start the heart action after it had been stopped by muscarine.

These findings should assist us materially in the application of lobeline sulphate to conditions in practice.

Indications for Lobeline Sulphate

Lobeline sulphate appears to be especially indicated in the following conditions, and in some of them it has proven to be almost indispensable; for examples in the tetanus and azoturia of equines. (Azoturia of horses is similar to paroxysmal hemoglobinuria of the human.) Lobeline sulphate should certainly prove of great value as a nonnarcotic sedative in cases of renal calculi, renal colic or hyperemia.

This drug should also be given a trial in cases of spasmodic asthma, spasmodic laryngitis, whooping-cough, hysteria, and hysterical convulsions, and in eclampsia.

As I have stated, my observations were of a purely clinical character, and made on animals like the horse and dog.

In cases of azoturia in the horse, where the animal was almost uncontrollable, I have seen 1-10 grain of lobeline sulphate render the animal perfectly tractable and apparently free from pain, bystanders commenting audibly on the "powerful dope" that the veterinarian had administered.

My first experiments with this drug, aside from using it in tetanus and azoturia, were conducted with the object of determining its action, if any, in cases of pulmonary emphysema or "heaves" of horses, and successive injections of lobeline sulphate were given with no apparent effect. The dosage ranged from 1-20 to 1-4 grain, 1-10 grain being the average amount necessary to produce full effect of the drug in azoturia of equines.

Its Action on Dogs

To determine the toxic dose of lobeline sulphate, seventeen dogs, ranging in weight from 10 to 25 pounds, were injected with lobeline sulphate.

Group 1.—Four dogs were injected with 1-50 grain.

Group 2.—Four dogs were injected with 1-25 grain.

Group 3.—Four dogs were injected with 1-10 grain.

Group 4.—Four dogs were injected with 1-8 grain.

Group 5.—Four dogs were injected with 1-4 grain. One dog, weighing about ten pounds, received 1-2 grain of lobeline sulphate.

In from one-half to one minute after the injection, the respirations became greatly increased in rapidity, but observations at this point were interrupted by thorough vomiting, followed by defecation, this occurring in from one to two minutes after the injection. The attendant reported successive full evacuations for three to four hours following injections.

The heart, after a preliminary quickening, was slightly slowed, the pulse being full, soft, and regular. In a total of thirty-six animals injected, without exception every animal promptly vomited and then in all but four cases defecated.

No animal showed any depressant or narcotic effect from this drug, except that habitual "barkers" did not exercise this function for a few hours.

As the ten-pound dog did not appear to be adversely affected by the injection of 1-2 grain of lobeline, we gave up expectation of recording any toxic effects.

Salivation was evidenced in the majority of the animals, and assuming that secretions were stimulated throughout the body, I believe that the evacuations were attributable to this action of the drug. The relaxation of the intestinal walls, together with abdominal pressure during vomiting, undoubtedly was responsible for the early evacuations.

Effect Upon Strychnine Poisoning

Desiring to test the ability of lobeline sulphate to control the convulsions of strychnine poisoning, I carried out a number of observations, in association with Doctor Zell.

Dog No. 1, weight about 20 pounds, received 1 grain of strychnine by the mouth; in twenty minutes the first symptoms of poisoning were observed, and then 1-4 grain of lobeline sulphate was given hypodermically, but the convulsions had set in to such a degree that they were uncontrollable, and the animal died in the usual manner.

The next dog, about the same size, was given 1 grain by the mouth, and, about eighteen minutes after administration, 1-4 grain of lobeline sulphate was exhibited. Symptoms of strychnine poisoning were

evidenced almost immediately. Death followed within two minutes.

Dog No. 3 received 1-2 grain of strychnine. We waited ten minutes and then gave 1-4 grain lobeline sulphate. Prompt vomiting occurred and the dog did not exhibit evidences of poisoning.

Dog No. 4 received lobeline first, and, after vomiting had occurred, 1-2 grain of strychnine was given. Absolutely no signs of strychnine poisoning developed for two hours and ten minutes; then he had the first convulsion, and died in about ten minutes. Heart action continued irregularly after respiration had ceased.

Dog No. 5 was given lobeline sulphate first and strychnine after vomiting; he showed no signs of poisoning.

Where strychnine is absorbed slowly, that is, when death does not follow within one to two minutes after the first convulsion, as was the case in Nos. 1 and 2, the lobeline exerts a remarkably antagonistic effect, producing emesis and thus emptying the stomach of unabsorbed poison. It relaxes the muscles wonderfully, but just what its exact counter-acting effect is we are unprepared to state, but intend to continue our experiments further. We do know that 1-20 grain of strychnine produced death in two other dogs of the same size.

Summary

Lobeline sulphate is a direct or systemic emetic, given hypodermically to dogs, in from 1-30- to 1-4-grain dosage, no narcotic action being exhibited, rather a stimulative action, especially to the secretory glands. Absolutely no depression follows its administration in dogs.

It should be used in conditions where a general relaxant is desired, and particularly when pain is evidenced through the renal, superior cervical, and vagus reflexes.

[Some experiments made on the human subject show that in 1-100-grain dosage lobeline sulphate will cause slight nausea, and vomiting and bowel-evacuation when 1-50 grain is given. There was no depression following its use, and the heart's action was excellent throughout. Respiratory action was increased. Nausea appeared within two to five minutes. Doctor Browne's suggestion that the remedy should prove of value in renal and hepatic colics, asthma, and other spasmodic conditions, is excellent. We shall develop this subject in future issues of this journal.—Ed.]

What Others are Doing

THE ADVENT OF PARALYSIS IN ACUTE ANTERIOR POLIOMYELITIS

The monograph entitled "A Clinical Study of Acute Poliomyelitis" that has been prepared by Francis W. Peabody, George Draper, and A. R. Dochez, and issued by The Rockefeller Institute for Medical Research, under date of June 24, 1912, in many respects is a classic. It contains the most careful description of the natural history of this disease, its symptoms, complications, and character that has ever been published, at least in our opinion, and because of the interest in this subject at the present time we are presenting several brief abstracts from this monograph, which may be read in connection with the editorial appearing on page 640 of this issue and which gives a general review of the disease. In the first of these extracts, the authors describe the advent of the paralysis in the following language:

"A curious thing is, the unheralded advent of the paralysis. One may observe in the morning that a child moves its arms easily; a few hours later, on going to the bedside for some other purpose, the patient is found lying quietly as before, but when it rolls over, one arm falls back limp. The child seems unaware of the loss of power. In a few cases, patients have complained of pain in an extremity shortly before paralysis supervened. While the presence of paralysis is easily detected in older children, it is sometimes most difficult to find in infants. In any case, the most satisfactory method of beginning a search for muscular weakness is, to sit down by the bed and watch the child for many minutes. Of course, in some instances, the patient lies a limp, inert form, the subtle expression of vitality gone. In such cases, a glance is enough to determine the presence of paralysis, and more careful examination is needed only to learn its extent.

"If the pain or tenderness is not too intense, gentle handling of the extremities soon discloses the muscle groups that still have some power left in them. Older children will usually move the arms or legs upon suggestions calculated to demonstrate faulty

motion. Often, however, when there is great pain, it is hard to tell whether the children will not or can not move. In such cases, the physician must decide whether the demonstration of the presence of a paralysis is of sufficient importance to justify his causing the patient the pain involved in such demonstration. In such cases, the only way in which the presence of a paralysis may be accurately determined is, by pricking the skin and determining whether or not the child draws the part away from the source of discomfort. For instance, if it be suspected that the deltoid is weak, the skin should be pricked on the posterior and inner aspect of the arm, when, if the deltoid is not involved, the arm will be drawn outward and upward.

"The extremity should be so placed at first that the suspected muscle will have to work against gravity; but it is surprising how quickly and skilfully the smallest infants turn and twist to make use of this natural force. Occasionally the presence of tone in a muscle can be shown by putting it suddenly on the stretch. For example, if the flexed forearm be sharply drawn down by the examiner toward extension, definite resistance will be noticed when the biceps is normal.

"There is one group of cases in which it is almost impossible to locate definitely the paralysis. These patients present all the other features of the disease, but no paralyzed muscles can be found. If such children be stood on their feet, however, they suddenly buckle at the hips and fall in a heap on the floor. Probably weakness of the gluteal muscles in some cases is accountable for this form; in others, weakness of the quadriceps.

"Mueller states that paralysis of the intrinsic back-muscles is of frequent occurrence. This is a difficult palsy to demonstrate in the acute stage of the disease; for, in the great majority of instances, the children will not or can not sit up at this time. In some cases, pain makes the patient antagonize the effort to sit up; in others, there is, apparently, such general weakness of trunk and neck that the head drops and the spine bends like a reed. Yet, in a week or two these children may b

sitting up straight in bed and playing actively."

ABORTIVE TYPES OF POLIOMYELITIS

The term "abortive" was applied by Wickman to cases of poliomyelitis in which paralysis does not develop. ("Beitraege zur Kenntniss der Heine-Medinschen Krankheit." Berlin, 1907.—"Die Akute Poliomyelitis, bzw., Heine-Medinsche Krankheit." Berlin, 1911.) According to his experience, these abortive types represented from 25 to 56 percent of the total incidence of the disease, and he is convinced, as is Mueller, likewise, that these figures are too low. They are agreed that the unparalyzed cases of poliomyelitis considerably outnumber the paralyzed. They believe that in cases of this type the general infectious disease-process is present, with possible involvement of the lymphoid tissues, spleen, liver, and other tissues, but without the classic symptom that gives the disease its name.

Wickman has attempted to classify this abortive type and describes four groups, as follows: (1) Cases running the course of a general infection; (2) cases in which meningeal irritation is marked; (3) cases in which pain is very marked and which are likely to simulate influenza; and (4) cases presenting gastrointestinal disturbances. Such a classification is an artificial one, but from a clinical point of view serves as well as any.

Peabody, Draper, and Dochez, whose brochure was cited in the preceding article, have had only a limited experience with cases that do not develop paralysis. Many times, however, they observed some degree of muscular weakness, which sometimes was transient, although not always so. In two instances, the children developed weakness about the pelvis, which made it difficult for them to stand. In another case, which they report in detail, the history of exposure, clinical picture, blood and spinal-fluid examination, and, finally, animal-tests for the virus all supported the diagnosis of poliomyelitis without paralysis. In another case, occurring in a child of three years, the principal symptoms observed were, malaise, anorexia, and drowsiness, all occurring a day or two before the child's brother became ill with a fatal attack. In still other examples of this type, this transitory muscular weakness was one of the prominent symptoms.

Of the other clinical features, it may be said that nervous irritability and drowsiness were the most frequent. Pain was very common,

just as in cases terminating in paralysis; and this pain might be either muscular or neuritic, it often was located in the neck or back, and frequently took the form of headache.

The disease which the abortive cases seemed most frequently to resemble was influenza. For this reason, attacks of a disease simulating influenza and occurring during the summer, especially in the neighborhood of a patient who has become paralyzed, should be viewed with suspicion and subjected to quarantine.

REMARKABLE MENTAL CHANGE OCCURRING IN FATAL CASES OF POLIOMYELITIS

The most remarkable feature of fatal cases of poliomyelitis, say Peabody, Draper, and Dochez, in their clinical study of poliomyelitis (see the monograph of the Rockefeller Institute for Medical Research, June 24, 1912, p. 71) is, the condition of the sensorium. To quote:

"The most remarkable feature of our fatal cases was the condition of the sensorium. Three of our patients were so young that observations on their mental state were not of value, but four, between the ages of 3 1-2 and 10 years, showed a very interesting and comparatively constant picture. We have already called attention to the apparent absence of toxic effects in many cases of poliomyelitis, and this is nowhere more strikingly illustrated than in these severe, fatal cases.

"During the prodromata and often during the acute onset of the early paralysis, the children may be sleepy and drowsy in the manner which is characteristic of so many cases. This condition is, however, apt to be mild and transient and it is often soon replaced by a clear mental state. With the onset of respiratory difficulty, it seems almost as if the children were suddenly awakened and made to realize the struggle before them.

"Little children seem to age in a few hours. One sees a heedless, careless, sleepy baby become all at once wide-awake, high-strung, alert to the matter in hand—and this is, breathing. The whole mind and body appear to be concentrated on respiration. Respiration becomes an active, voluntary process, and every breath represents hard work. The child gives the impression of one who has a fight on his hands and who knows perfectly how to manage it. All it wants is, to be left alone, not to be interfered with, to be allowed

to carry out its fight on its own lines. Instinctively it husbands its strength, refuses food, and speaks, when speech is necessary, quietly and with few words.

"One little child of four, so helplessly paralyzed that she was unable to move but with a mind that seemed to take in the whole situation, said to the nurse clearly, but rather abruptly, between her hard-taken breaths: 'My arm hurts'; 'turn me over'; 'scratch my nostril'; and then, when the doctor approached: 'Let me alone, doctor!'; 'don't touch my chest.'

"Pressure on the chest, tight neckbands, anything that obstructs easy respiration is immediately resented. The child demands constant attention, is irritated, unless everything is done exactly as it wishes it, and often shows an instinctive appreciation for some especially efficient nurse. It is nervous, fearful, and dreads being left alone.

"The mouth becomes filled with frothy saliva, which the child is unable to swallow, so it collects it between its lips and waits for the nurse to wipe it away. It likes to have its lips wet with cold water, but rarely attempts to take it into the mouth, for it knows it cannot swallow it.

"During the whole course it is remarkable that cyanosis is absent. There is a little bluish tinging of the lips and tongue, but much more distinctive is the pallor, which is sometimes striking. Sweating is profuse. Then, as respiration gets weaker, the mind becomes dull, and with the occasional return of a lucid interval it gradually drifts into unconsciousness. An hour or more later, respiration ceases."

This peculiar mental state is much less noticeable in small babies, who are more likely to be drowsy most of the time until the end comes, but in older children, this mental alertness is characteristic. The authors say that this has been so strongly fixed in their minds that they prefer to have a child brought to them in a stuporous condition rather than with a mind whose nervous acuity seems due to a perception of impending danger.

PAIN AS A SYMPTOM OF POLIOMYELITIS

Quoting again from the Rockefeller Institute monograph referred to in the preceding article, the authors (Peabody, Draper and Dochez) give the following graphic description of the pain, which, as they state, is a constant feature of the acute stage in every attack of poliomyelitis:

"In general, three types are found: spontaneous pain, pain caused by manipulation, and tenderness of the muscles and nerve-trunks to pressure. These are not all equally common. Pain caused by passive motion is most frequent and seems to depend primarily upon anterior flexion of the spine. The clearest demonstration of this fact occurs when a child's trunk is bent ventrally, shoulders toward hips, to throw the spinous processes apart in preparation for lumbar puncture. Such a procedure brings about immediately a marked degree of anterior spinal flexion and is strenuously objected to by the patient. The entrance of the needle is often unnoticed.

"There are several other manipulations, such as the test for stiff neck and Kernig's sign, which necessitate more or less bending of the spine anteriorly. The ingenious and active efforts of the children to thwart any motion which involves the least bending forward of the spine or, indeed, diminishes a slight protective opisthotonos, have been very striking, so much so that we have been led to believe that the stiff neck of poliomyelitis differed from that of meningitis in being voluntary rather than reflex. With the Kernig's sign also, the voluntary element, where retained muscle-power permits, is even more definite. If flaccid paralysis of a lower extremity makes resistance impossible, there is always complaint of pain when extension is carried until the buttocks begin to rotate forward and upward; but when the muscles have power to act, resistance to hyperextension is definitely voluntary and has not the feeling of reflex spasm.

"This painful bending of the spine is also often responsible for the unwillingness of children to begin sitting up in bed. The symptom occasionally persists for several weeks and, in these instances, is the only thing that keeps a happy, healthy-looking child flat in bed. It is interesting to watch these patients on their backs, playing cheerfully and actively with arms and hands, suddenly look glum, apprehensive, and suspicious when a move is made toward them that may mean raising their shoulders and heads from the pillow. Often early improvement in the paralysis is masked by this painful symptom or the fear of it.

"Spontaneous pain sometimes occurs in poliomyelitis. This is much less frequent than pain on passive motion. Usually it follows the course of the nerves like a true neuritis. It may be very severe. Young children can not definitely recognize limitation of pain to the course of a nerve, and

they complain, therefore, of distress in the whole leg or foot. Such pain may perhaps be more often present than is generally supposed, for it frequently requires much urging and even sharp prodding to make a child move an extremity which seems to be paralyzed, when in reality the muscles have power but are painful.

"In some cases, a child will cry out with pain, which seems to come in stabs and paroxysms. The duration of pain of this sort varies like most of the symptoms of the disease. As a rule, it rarely lasts more than a week. In the case of one adult, the pain was so severe that morphine was necessary on several occasions. With young children, we have used codeine.

"The third painful feature of acute poliomyelitis is, the tenderness of muscles to pressure. Sometimes merely a touch suffices, but usually the muscles must be seized between thumb and fingers and a little pressure made to produce pain. There is little doubt that this tenderness is in the muscles and is not a hyperesthesia of the skin; for, rubbing the skin without pressing on the underlying muscles or even pinching causes no painful sensation. A few cases also have definite tenderness over the nerve-trunks, like a neuritis. In one adult with complete flaccid paralysis of the right lower extremity, who had also great spontaneous pain, pressure over the anterior crural trunk caused intense suffering. Headache is more a symptom of onset than of the acute stage."

DETOXICATING EFFECT OF FAT UPON STRYCHNINE

That fat (lard) diminishes or even destroys the toxic action of strychnine, was first reported in medical print (so far as the Abstractor is aware—so far as this country is concerned) in *The Medical World*, at some time antedating the year 1899, the anonymous correspondent having saved a man's life by feeding him nearly a pound of melted lard. The doctor had read of this antidote also in *The Medical World* (file not available). Then another reader wrote that as long ago as in 1877 his preceptor had had a similar experience, giving one pint of lard. And thereupon a North Carolina practitioner wrote to the journal named that among the piney woods ruralists of those regions it was common practice to feed their dogs melted lard when poisoned with strychnine. This antidotal property was discovered, he explained, soon after the civil war, when the negroes began

to keep dogs, and, these killing the sheep, were thrown strychnine concealed in lard or bacon. The fat, the planters discovered, rendered the strychnine ineffective. These data may be found grouped in detail in *The Western Druggist* for 1899, and are very interesting. For a long time these facts were received with doubt in journalistic circles, though eventually accepted.

Now P. Paulucci, of the Physiologic Institute at Rome, has taken up this problem systematically and reported the results of his animal-experiments (*Arch. d. Farm. Sper.*, 1915; cf. *Ther. Monatsh.*, 1915, p. 408).

The author has established the fact that all fats and fat-like substances act to reduce the saponification of strychnine, whether introduced subcutaneously or applied directly to the motor centers of the cerebral cortex or the spinal cord, irrespective of whether the mixture of the alkaloid and the fat contains any water or not. The fat causes an absolute reduction of the toxicity; toxic doses no longer give rise to toxic symptoms and lethal doses do not kill; the period of latency is materially extended. Relatively, the greatest detoxicating influence is exerted by mineral fats (petrolatum), while butter and cerebral substance (lecithin) are lowest in the scale.

DISINFECTION OF THE NASOPHARYNX OF MENINGOCOCCUS CARRIERS BY CHLORAMINE

Experiments were undertaken recently, in the Central Cerebrospinal Laboratory of the Royal Army Medical College, London, for the purpose of determining whether persons carrying the meningococcus in the nasopharynx can be freed of that microorganism by causing them to inhale the air of a room saturated with vapor containing a disinfectant. The disinfectant used in these experiments was chloramine (known in America as chlorazene). The results of the investigation are reported by Lieutenant-Colonel M. H. Gordon, in *The British Medical Journal*, for July 1, and show that

1. The air of an ordinary room, when brought to the point of saturation by means of a steam-spray containing 2 percent of chloramine, acquires pronounced bactericidal properties for the staphylococcus epidermis.

2. Such air can be tolerated by human beings for periods varying from six to twenty minutes without marked discomfort and without harm.

3. When inhaled through the nose, this air succeeds temporarily in destroying the meningococcus in the nasopharynx of carriers. Its sphere of usefulness in this and other respects is being more closely investigated.

We intend to publish a more detailed report of these interesting experiments, in *CLINICAL MEDICINE* for September. See the editorial relative to this antiseptic, on page 647, this issue.

INJECTION TREATMENT OF NEURITIS WITH HOT SALINE SOLUTION

Some years ago, injections of alcohol into the nerve-tissue were recommended for intractable neuritis, for example in sciatica and in tic douloureux. In an effort to determine whether alcoholic injections into the nerve-tissue are innocuous or not, Dr. Alfred Gordon found that these injections may give rise to decided degenerative changes. He has, therefore, abandoned the alcoholic injections in favor of saline solution of high temperature (*Ther. Gaz.*, 1916, June, p. 392), from which latter he has obtained highly satisfactory results. These injections were repeated at intervals varying from four days to two weeks.

While the time is too short to claim permanent cures, the relief experienced by his patients has been so decided and continuous, that the author recommends this method in the most emphatic manner. Saline solutions of high temperature give better and more lasting results than when the fluid is tepid or cold.

THE TRANSMISSION OF DISEASE BY SPUTUM

The campaign against tuberculosis not only has been effective against that disease, but it has also been of service, in a general sense, in promoting an increased attention to general hygiene, and therefore in a lessening of the modes by which infectious diseases are transmitted. Yet, it must be admitted that even the foremost prophylactic precept, that of the perniciousness of spitting, still is neglected in many places, and that its meaning by no means as yet is fully understood. As Dr. Wallace A. Manheimer (*Med. Rec.*, 1916, June 3, p. 997) points out, the delicatessen-store clerk who moistens his finger with saliva to pick up the piece of paper in which to wrap the butter is spitting on the paper and, therefore, on the butter; the street-car conductor who wets his fingers and then gives

you a transfer ticket is spitting on the paper slip and, therefore, on your hand.

The common habit of moistening the gum of postage stamps and envelopes with saliva, the author continues, has suggested the possibility of the transmission of disease through letters infected in that way. The evident contamination of letters when they are sealed and stamped and the frequent spreading of the saliva by the fingers and hand to other parts of the envelope suggest the importance of determining what the danger from this source really is. Letters are handled by the carriers and postal clerks almost immediately after their being mailed, and they are delivered to the addresses sometimes within a few hours, very often within but twelve or eighteen hours after being mailed.

Immediate contact of the hands with saliva and the subsequent introduction of the fingers into the mouth represents a much more dangerous mode of infection than, for example, the inhalation of dried sputum. The discharges from the mouth are responsible for almost as many diseases as are contracted from all other sources put together. Tubercle-bacilli transmitted in wet saliva are far more virulent than when dry and blown in the air. Wet or fresh sputum, when we consider the frequency with which it is spread about, represents the most dangerous material discharged by human beings. The pneumococcus, the diphtheria-bacillus, the germs of measles, scarlet-fever, smallpox, whooping-cough, epidemic meningitis, mumps, influenza, common colds, and other infections are more frequently transmitted through fresh sputum than in any other way. The author named refers to a recent case of syphilis contracted through counting paper money with fingers moistened with saliva, as strongly emphasizing the caution which should be observed from this source of infection.

All these things are so self-evident that they appear to be ludicrously simple. And, yet, even physicians offend against the most ordinary laws, not only of hygiene, but of prophylaxis; as witness the frequency with which one can see physicians moistening their fingers with their tongues to facilitate the turning of the leaves of a book. The present writer has watched one of the foremost tuberculosis-physicians of our country do this same thing time and time again. True, he is not tuberculous and does not injure anybody; but it is, withal, a filthy habit and should be eschewed, if for no other than esthetic reasons.

It must be admitted that as physicians, who are supposed to be the teachers of the people in matters of health, we are not always consistent in our practicing what we preach, and it may be well to consider the warning voiced by Doctor Manheimer, in order to narrow still further the many ways in which infections may be transmitted.

PARATYPHOID FEVER COMMON IN EUROPE

One of the most interesting results following the virtually universal employment of prophylactic typhoid vaccination among the European armies has been the comparative increase in the number of cases of paratyphoid fever. This is strikingly shown by W. H. Willcox, in a paper published in *The Lancet* of February 26, in which he gives the results of a large number of cases treated in the Dardanelles area.

Altogether 150 cases were studied. Of these, 13 1-2 percent were those of typhoid fever, and 86 1-2 percent those of paratyphoid fever. This increasing proportion of paratyphoid fever and the enormous shrinkage in the number of true typhoid fever corresponds closely to the experience in the French army, as already reported in these pages.

The mortality from paratyphoid fever, as reported by Willcox, was found to be between 3 and 5 percent. He believes that this disease, whether it be caused by the "A" or the "B" organism, is more serious than is usually supposed. He urges early diagnosis, the recognition of carriers as a problem, and the adoption of prophylactic measures. At present, the protective inoculation against typhoid fever includes at the same time protection against paratyphoid "A" and "B," a mixed vaccine being employed for this purpose.

PITUITARY GLAND IN THERAPY

Pituitary gland, in one of its various forms or derivatives, is proving an efficacious agent in various ways and is finding extensive application, while, basing upon theoretical speculations, it is being widely experimented with for many pathologic conditions, but the reports upon which are more or less conflicting. Success with this substance is based largely upon its power to raise the arterial pressure (with diuresis as one consequence) and to stimulate the enteric musculature. Upon this subject R. Hofstaetter (quoted by *Muench. Med. Woch.*, 1915) has published an exhaustive collective thesis,

and the following conditions are enumerated as among those falling into the categories named and in which it is found useful:

Collapse, postoperative shock, acute infectious diseases exhibiting marked recession of blood pressure, hypophysis (the symptom-complex as constructed by Martinei), paroxysmal tachycardia, myasthenia, eclampsia, puerperal and postoperative retention of urine, and postoperative intestinal paralysis. Furthermore, since injections of pituitrin have been observed to induce a condition of somnolency, it is recommended for insomnia and neurasthenic conditions. In combination with adrenalin ("asthmalysin"), pituitrin controls bronchial asthma. Osteomalacia and rickets yield to this therapy. Some have observed increased libido following its use, employing it in impotency, while others believe it to allay sexual irritation.

Other conditions for which pituitary gland has been advised and in part tried are: acromegaly, dystrophia, adipositas genitalis, multiple glandular sclerosis, Dercum's disease, exophthalmos, myxedema, goiter, scleroderma, Addison's disease, tetany, myasthenia, tachycardia, chondrodystrophia, ateliosis, micromelia; while the following come under the head of gynecology, namely, uterine hemorrhage, hypoplasia, amenorrhea, climacteric and post-castration disorders, vomiting and toxicoses of pregnancy, deficient lactation.

EFFECT OF PITUITARY EXTRACT UPON THE ARTERIAL LUMEN

In the same communication, Fischel (*loc. cit.*) tells of experiments according to which small doses of pituitary extract exert a vasoconstrictive action; this, in opposition to the results reported by previous investigators, who observed the exact opposite action. The latter, though, had employed appreciably larger amounts.

FOREIGN BODIES IN THE ESOPHAGUS

Since, in 1897, Professor Killian, of Freiburg, demonstrated the feasibility of passing straight and rigid tubes through the glottis into the tracheobronchial tree, by reason of its great elasticity, and since he removed, in the same year, a foreign body from the bronchus of a living child and thus demonstrated the usefulness of the procedure, Killian himself has extended his method of direct examination and therapeutic procedure to the esophagus and in 1899 established

esophagoscopy as a practical method. Since then, Killian's method has been improved and has demonstrated its value for the removal of foreign bodies from the food- and air-passages, so that during the past few years it has completely revolutionized our methods of treatment.

Improvements in instrumentarium and technic not only have greatly minimized the dangers, but have enormously reduced the death-rate in cases treated in this manner. Thus, for example, in the case of foreign bodies in the bronchi, when left to themselves, the mortality used to be 58 percent; now, thanks to the direct method, if resorted to early, the death-rate is practically *nil*. Cases, however, are still reported where death has occurred from the accidental swallowing of a tooth-plate or other foreign body, after ineffectual attempts at extraction through the mouth, followed in some instances by the external operation of esophagotomy or gastrotomy.

The blind use of bougies or probangs has also been the cause of many fatalities. The operation of esophagotomy by no means is free from danger, for, the risk of opening the cellular planes in the neck cannot be ignored. Statistics show that esophagotomy for removing foreign bodies is followed by a mortality of from 12 to 20 percent; which is to say, nearly ten times as great as that following extraction by esophagoscopy.

A few years ago, it was held that the extraction of foreign bodies with sharp edges and hooks—dental plates, for instance—is dangerous and that it may lead to fatal injuries of the gullet and adjoining parts. Here, esophagotomy or gastrotomy was held to be indicated. At present, recourse to external surgery is one rarely considered justifiable, unless the foreign body has already escaped through the esophageal wall. In all other cases, no matter how large the foreign body, if it has gone in by the natural passage, it can be brought out by the same route. When swallowed, it assumes the position which offers the least resistance, and it remains for the endoscopist to assist its return journey under conditions that will offer the least resistance. In accordance with this very sensible view, successful attempts have been made in recent years to improve instruments and the technic for the removal of foreign bodies from the esophagus and from the bronchi, in a degree that was not believed possible even a few years ago.

In an interesting communication to *The Lancet* (1916, p. 992), Dr. Irwin Moore,

surgeon to The Throat Hospital, at London, describes several new instruments that have been designed for the purpose under consideration. For a full understanding of his instructive paper, it would be necessary to reproduce his illustrations, which is not feasible, and we strongly advise those who may be interested in this procedure to study Moore's original paper, the journal being on file in most medical libraries.

GOITER BENEFITED BY INTESTINAL DISINFECTION

An interesting observation has been communicated by F. Messerli, of Lausanne (*Rev. med. d. l. Suisse rom.*; cf. *Ther. Monatsh.*, 1915, p. 413), regarding the influence of long-continued disinfection of the intestines upon goiter. The subjects were military persons, and they were variously and interchangeably subjected to courses of salol (3.0), thymol (0.1 twice daily), benzonaphthol (0.5 thrice daily), creosote (3 pills), and mechanical cleaning out by means of laxative pills. The goiters, the author asserts, invariably grew less in size.

Doesn't that suggest the value of the sulphocarbolates in these cases? It reminds us that some four years ago McCarrison (see *Lancet*, Feb. 10, 1912) ascribed goiter to the presence of a living microbic organism in the intestine.

TREATMENT OF SALVARSAN TOXEMIA

In view of the frequency of toxic symptoms following the administration of successive doses of salvarsan, Willcox and Webster (*Brit. Med. Jour.*, Apr. 1, p. 473) strongly advise that an interval of four weeks elapse between the administrations of full doses of this drug. With shorter intervals, there is risk of cumulative action, owing to the continued presence of some of the arsenical preparation in the abdominal viscera.

Prophylactic treatment, the authors declare, is most important. An aperient should be given the night before the remedy is injected, and alcohol and tobacco should be avoided for twenty-four hours before and after the administration. The patient should remain in bed on the day in which the drug is given, and for twenty-four hours afterward.

Slight symptoms, such as nausea, slight pyrexia, headache, and so on, call for nothing but the simplest remedies. Should the temperature remain above normal for more than a few hours, the patient should remain

bed until it has returned to normal and remained there for at least twenty-four hours.

It is wise to diet patients carefully until all symptoms have disappeared. The diet should be light, as, for example, milk, milk puddings, fruit, vegetables, toast, bread, and the like. Meat, meat-extracts, soups, and also alcohol are to be avoided. Constipation must be prevented by means of suitable aperients.

When serious symptoms occur, such as collapse, twitchings, stupor, delirium or coma, an intravenous injection of physiologic saline solution (2 to 3 pints) should be given and repeated if necessary. These saline injections may also be made subcutaneously. Rectal injections of physiologic salt-solution, containing also 3 drams of sodium bicarbonate to the pint, should be given every eight hours. When the blood pressure is not low, venesection should be done and about 10 ounces of blood withdrawn, then infusing into the vein an equal volume of plain physiologic solution.

If the patient becomes comatose, it is important to continue nourishment by mouth. For example, 15 ounces of peptonized or citrated milk may be introduced through a stomach- (or nasal) tube every six hours. For collapse, strychnine, 1-40 grain, may be given hypodermically every four hours, while oxygen or oxygen passed through alcohol may be administered, with advantage.

In the early onset of toxic symptoms, the following mixture is to be given every three hours:

Sodium citrate.....	dr. 1
Sodium bicarbonate.....	drs. 2
Potassium citrate.....	drs. 2
Caffeine citrate.....	grs. 3
Syrup of orange.....	dr. 1
Water, enough to make.....	oz. 1

TETANUS PROPHYLAXIS IN THE PRESENT WAR

While, of course, there is a difference of opinion among European surgeons as to the value of tetanus-antitoxin as a prophylactic, the statistics thus far available have certainly seemed to demonstrate that it is an agent of the utmost value. The first report upon it is that made by Hufnagel in the conference of army surgeons in Namur in November, 1914. He reported 2193 wounded treated, and among these 27 cases of tetanus. As soon as the wounded soldiers were being given prophylactic injections of tetanus-antitoxin, tetanus ceased to make its appearance, although 1195 men had been treated in this manner and

many of these had received very serious wounds.

Madelung reported 63 cases of tetanus among 8145 wounded, taken care of in thirty-seven hospitals in which no prophylactic injections were employed. This is a percentage of 7.7. In one hospital where prophylactic injections were administered in selected cases, there appeared 107 cases of tetanus among 19,432 wounded, or 5.5 percent. In three other hospitals, where protective injections were given, there occurred, among 2104 wounded, only 12 cases of tetanus, or 0.57 percent—certainly a striking illustration of the efficacy of antitetanic serum in preventing tetanus when used systematically. In 20 cases of tetanus which developed despite preventive injections, it was found that in not one of these had the serum been given on the day on which the wound was received, and in half of the cases the injection was not administered until six days had elapsed.

Goldscheider reported 4 cases of tetanus among 500 wounded, but all of these four had shown prodromal symptoms of the disease before they received the injection of the serum.

The time surely will come when every American physician will feel it a duty to be provided with tetanus-antitoxin for immediate use in the case of every patient suffering from a serious wound.

EMETINE TREATMENT OF AMEBIC DYSENTERY

In view of the probability that American soldiers may be sent to Mexico, it is most desirable that every American practitioner should know something about the therapy of amebic dysentery, since this disease is known to be exceedingly common throughout Central America and by no means uncommon in the southern part of our United States.

Emetine is an effective remedy for dysentery—a specific. Indeed, it is the one remedy that should always be resorted to in these cases; and it can be used with entire safety, without the slightest danger, if the physician exercises common sense and avoids overdosage.

We find an exceedingly interesting paper upon this subject in the "war number" (March, 1916) of *The Practitioner*, (London) this paper being written by George C. Low, of the London School of Tropical Medicine.

In this paper Doctor Low states that he usually gives 1 grain of the emetine hydro-

chloride at a dose, throwing the solution deeply under the skin or directly into some muscle, after sterilization of the surface with iodine and alcohol. When the patient is in bed, the buttock is selected as the site for injection, but any other locality will answer. He goes on to say:

"The next question that comes up for consideration is, How long should the course of emetine continue and what quantities of the drug should be given? I now generally give a course of 12 1-grain injections, one injection a day, or, two a day, to begin with. Toward the end of the course, they may be given on alternate days, if this is found to be more suitable. These figures may be taken as a general standard, but in actual practice they may have to be modified from time to time, according to circumstances and conditions that may arise. One of these is, the occurrence, in some cases, of diarrhea about the fifth or sixth day of treatment. Even though this occurs, one sometimes goes on and finishes the course, or, in other cases, one may reduce the dose or stop for a day or two and then go on again.

"The only way of determining the progress of a case of dysentery is, carefully to examine the stools daily, and for this purpose flat glass stool-dishes will be found to be useful. By this means, one sees at a glance what the consistency of the stool is, whether blood or mucus is still present, the color, and many other details.

"As a rule, the response to emetine is certain and quick. After three or four injections, an improvement will be noticed, fecal matter appearing, while the blood and mucus diminish, and finally disappear. Soon after this, unless, as in some cases, the emetine excites a diarrhea of its own, the stools become solid and formed and the patient, to all intents and purposes, is cured. Even now, however, a slight streak of blood and mucus may be detected on the solid feces, and this means that an ulcer is still open and not healed. In a few days more, this will probably have disappeared, too, and nothing further, pathologically, may be noted macroscopically.

"The stools must now be carefully searched for amebæ or their cysts, this examination being carried on, say, once or twice a week for a month or two, in order to determine whether there is to be any return. If amebæ or blood and mucus reappear, a second course of emetine will be necessary. This will not require to be so prolonged as the first and may be given in 1-grain doses every evenin^g, until

6 grains have been taken. Some authorities recommend a second course such as this, even in the absence of any definite symptoms of relapse, and, if convenient, it might be given a month after the end of the first course.

"Larger doses than those described are, in my opinion, unnecessary, and may even be dangerous. Dale has recently described poisoning symptoms in cats and rabbits when kept for prolonged periods of time on doses analogous to those used in man, and this should be borne in mind."

THE TREATMENT OF TYPHUS-CARRIERS

In five cases in which the patients had recovered from typhus fever, the typhus-bacillus still was demonstrable in the feces. The treatment thereupon instituted by F. Kalberlah, at the military hospital of Frankfurt a. M. (*Med. Klin.*, 1915, p. 546), consisted in administering tincture of iodine (Pharm. Germ.), 7 to 15 drops in water three to five times a day one-half hour after meals, and one teaspoonful of animal-charcoal (Merck's, from blood) from three to five times a day. One of the subjects, whose urine also contained the bacilli, received, in addition, urotropine and salol.

Within eight days from starting this treatment, bacilli no longer could be detected in the excreta, although in two of them they were again found after a lapse of time; which, though, readily yielded to the same treatment. At the end of two months, careful tests failed to reveal the presence of any of the offending organisms.

As to whether this therapy applies only to fresh cases or also to older infections, experience must decide. No disagreeable local or general effects made their appearance.

SOKODU: ERUPTIVE SEPTICEMIA CAUSED BY THE BITE OF A RAT

Sokodu or sokoshio is the Japanese name of a disease that is common in China and Japan following the bite of a rat. Formerly it was thought that this disease was confined to the Orient, but recent observations have shown that it occasionally occurs in America and Europe. A description of a case of this kind is given by Fiévez in the *Paris Médical* for April 15, page 388.

Without going into details, we may mention the characteristic symptoms of this peculiar affection, as originally described by Gouget

in the *Presse Médicale* for March, 1912, and verified by Fiévez in the article in the *Paris Médical*, just referred to.

The symptoms of sokodu occur exclusively as the result of the bite of a rat. There is a long period of incubation (of several weeks), then there occur a number of attacks, these being sometimes quite numerous, separated by intervals of apparent cure, and characterized, when completely developed, by rising temperature, glandular enlargement, and a peculiar eruption resembling an exudative erythema.

In the case reported by Fiévez, there was an incubation period of fourteen days after a wound caused by a rat bite had entirely healed, then appearance of ulcerative, necrotic lesions at the seat of the bite, these being much more severe than the original wound and accompanied by decided lymphadenitis. The skin eruption in this case was papular and general, accompanied by high fever. After a week of apparent cure, a second attack occurred, this being shorter, with recrudescence of the original skin eruption. Again there was recovery, followed by a third attack, with very slight fever. The treatment was entirely symptomatic.

MORE ABOUT THE INJECTION TREATMENT OF HEMORRHOIDS

Last month we printed a brief abstract from *The Lancet* of an article by F. Swinford Edwards commenting upon a paper by Dr. Arthur S. Morley on the subject of hemorrhoids, which we had the pleasure of reproducing in our May issue. In the April 22, 1916, issue of *The Lancet* (see p. 886), Doctor Morley criticizes Doctor Edwards' criticism of his paper.

In this latest contribution Morley says that he invariably uses the speculum in every rectal case, because *only through its use is it possible to diagnose accurately many rectal lesions*. There are numerous cases of hemorrhoids in which bleeding, pruritus and other troublesome symptoms exist but in which the piles rarely or never prolapse, and cannot be made to do so. In order to diagnose them, they must be seen, and the only way to see them is to pass a speculum. Naturally, the only way to inject these piles is through a speculum. In this respect he disagrees absolutely with Edwards, who only injects such piles as can be protruded. This restriction, Morley declares, "deprives by far the larger class of patients of the benefits of the injection method and reserves it for the

worst cases, in which its success is least certain."

Doctor Morley says that he rarely needs any assistance, though he always uses a speculum. He has never had any trouble with hemorrhage, which never exceeds a few drops. It can be readily soaked up with a single swab. He finds it quite easy to inject the fluid into the center of each pile or into its base and he can easily reach high-lying piles by means of the speculum—piles which, though large, are unlikely to come down outside the anus.

THE TREATMENT OF GRIP

There are many remedies for the treatment of grip, but, of course, there is no specific. However, Dr. Beverley Robinson, of New York, in a paper printed in *The New York Medical Journal* for February 12, praises highly the following combination, dispensed in capsules:

Ammonium salicylate.....grs. 3
Caffeine.....gr. 1-4

Two such capsules (or double the amount may be put into one large capsule) should be taken by an adult, every two hours, for four or five doses, and then every three or four hours. He asserts that very decided benefit follows the use of these capsules. They are the most useful remedies that he has tried for the treatment of grip.

In addition to the preceding, Doctor Robinson adds 1-2 grain of phenacetin to each capsule, providing pains are severe; but in that event the patient should be watched carefully. He further advises the insertion of a little carbolated petrolatum into the nostrils; also a mouthwash and gargle of alkaline antiseptic solution (N. F.).

While he has never used the foregoing ammonium salicylate combination for preventing attacks of influenza, he is inclined to believe that it might be useful for that purpose. He also suggests the desirability of alkaline medication in these cases; for instance, the use of Vichy water or simply sodium bicarbonate in association therewith. Isolation of the patient is advised.

OPTOCHIN AS A CHEMOTHERAPEUTIC AGENT IN MALARIA

As evidenced by a number of notes printed in these pages, ethylhydrocuprein (or, optochin, as it has been termed for short by Morgenroth, its sponsor) has acquired a safe reputation in the treatment of pneu-

mococcus-infections and in ophthalmology, but it also bids fair to prove useful in protozoic diseases, more particularly in chronic malaria.

In the latter respect, Izar as well as Nicosia have reported extensive excellent successes (*Berlin. Klin. Woch.*, 1914), while from among subsequent writers we quote Emil Liefmann, of Frankfurt a. M., who describes his result in one such case (*Ther. Monatsh.*, 1915, p. 260). All these clinicians consider optochin superior to plain quinine in these affections.

Liefmann's case was one of malarial anemia, contracted some three years previously in German East Africa, the attack supposedly having been cured at the time; but the man (a 28-year-old civil engineer) had continued to take quinine prophylactically until he returned to Germany two years later. In the course of months, however, he began to sicken, and the author, when consulted, diagnosed a severe form of the condition named and the existence of a greatly enlarged spleen, and likewise enlarged and indurated liver. The microscope revealed the presence in the blood of the Laveran semilunar plasmodia and a few small rings of the "tropica"? The relatively small numbers of protozoons in the peripheral blood, together with the splenomegalia, warranted the assumption that the parasites were heaped more in the deeper-seated organs.

Because of the known resistance of the macrogametes to quinine, Liefmann prescribed ethylhydrocuprein hydrochloride in doses of 1-2 Gram (7 1-2 grains) three times a day, besides ordering a roborating diet.

We omit the clinical picture and laboratory findings, confining ourselves to the result. The treatment began on the 18th of March, 1914, and by March 27 the abdominal tension was greatly diminished, while the patient's appetite was enormously stimulated, amounting almost to voracity. By the 31st, his condition and appearance were much improved, the evening temperature for two days had not exceeded 36.7° C., and the spleen was markedly reduced in size. The optochin now was reduced to two doses a day, but supplemented by arsenous acid in increasing dosage. By April 6, the subject declared himself as being cured; however, the spleen still showed some enlargement, while after a long search over three blood smears a single macrogamete was discovered. Consequently, the optochin, 1-2

Gram per day, was continued for five days longer, and on the 16th of April the spleen did not evidence enlargement under percussion, although palpable at very deep inspiration. Parasites were absent. The patient had a rosy appearance and had gained 10 pounds. The hemoglobin-content of the blood was 80 percent.

Thus, within the short period of three weeks, by means of ethylhydrocuprein, a clinical cure of pronounced chronic malarial anemia was effected, an enormously tumefied spleen reduced to normal size, and persistent forms of malarial plasmodia were made to disappear from the blood.

The author hails this as a triumph over ordinary quinine-therapy; whether, the cure was absolute, however, cannot be determined, the subject having immediately returned to his post in Africa.

It may be mentioned that the patient experienced ear-noises, tremors, and ocular flickering, and, while taking the three daily doses, a confused sensation; which symptoms, however, always passed away after an hour at most.

THE FATE OF PAPAVERINE IN THE ORGANISM

Some highly interesting animal-experiments conducted by K. Zahn, of the Pharmacologic Institute at Breslau, have been described in the *Biochemis he Zeitschrift* (1915, p. 444.—Cf. *Ther. Monatsh.*, 1915, p. 270), the outcome of which would, for one thing, seem to explain why—as has been observed—patients rapidly become dulled against papaverine when physiologic doses are repeated at relatively short intervals, while, secondly, presenting a further possibility of the ultimate fate of the active principles in the animal economy.

Hitherto we knew of but two ways in which alkaloids were disposed of, namely; either they are excreted unchanged in their entirety—strychnine, for example—or, like atropine, they are partly destroyed and in part excreted unaltered.

Now, however, the extensive series of delicate experiments by Zahn have demonstrated for papaverine that that alkaloid is rapidly and utterly annihilated in the system when introduced parenterally. At least, that is the reasonable deduction, for its presence can not be demonstrated in any organ or in the excretions, nor was the author able to discover any derivatives or products of catabolism. Only when super-

lethal doses of papaverine were given by mouth, appreciable amounts of it could be found after death; and then only in the digestive tract of the animal. Incidentally, the facts here developed will prove of considerable forensic interest.

One other fact should be noted in this connection, namely, papaverine-sulphonic acid exhibits a physiologic action contrary to that of papaverine itself, in that it not only is extraordinarily nontoxic, but a large percentage of it can be regained from the excreta in an unchanged condition.

A few posologic addenda may here be adduced from Doctor Zahn's experiments. Rabbits are not readily affected by papaverine; not less than 1.4 Gram per kilo weight is required to induce moderate respiratory acceleration. Cats and dogs are much more sensitive to it, in that doses as small as 0.06 Gram per kilo-weight give rise to severe toxic symptoms—tremor, staggering gait, hyperexcitation followed by paralysis—while 0.12 Gram per kilo kills a dog within a few hours.

BALANTIDIOSIS CURED WITH EMETINE

A further extension of the rapidly widening therapeutic field of emetine has been reported from South America, the spokesman being Dr. Relli Axter-Haberfeld, of Belio Horizonte (Brazil), his highly important contribution to the literature having been published in the *Muenchener Medizinische Wochenschrift*, 1915, page 152.

The author (who bears a Portuguese-German name) had for a patient a 60-year-old woman afflicted with a severe balantidiosis and, reasoning from dysentery and pyorrhea, concluded to give emetine a trial. The result was a brilliant one.

Once each day, he administered a subcutaneous injection representing 0.03 Gram (1-2 grain) of emetine, until a total of 0.25 Gram (4 grains) of the alkaloid had been given; in other words, 8 doses of 1-2 grain in eight days.

For four months, the woman had had on an average daily 12 liquid alvine discharges, mixed with blood and pus, and, consequently, was emaciated in a high degree and unable to stand unsupported; but had no fever. The emetine course cured her of this affection completely, and permanently. After the first dose, she had but one stool within twenty-four hours. And so it continued, the stools improving, while no more balantidia were found after the third day, not even dead

ones. At the points of injection, there had formed intensely itching eczema-like patches, but these disappeared readily upon the application of some appropriate unguent.

This parasitic affection seems to be but rarely encountered, so that the editions of Gould's and Stedman's (the two dictionaries at the abstractor's disposal at this writing) do not even contain the (properly constructed) term balantidiosis (or, is balantidi-asis better?), while there even still exists doubt as to the specific symptom-complex being ascribable to this organism. As to this latter question, that possibly find its answer, in that some investigators recognize both a pathogenic and a nonpathogenic species.

Balantidium means, a sacculate creature (dim. of Greek *balantion*, bag; *balanos*, acorn, something "ball"-shaped; hence, also, glans penis); other names for this infusorian parasite being, paramoecium coli, plagiotomacoli, leukophrys coli, and bolophrya coli. It is a protozoon, and was first recognized as long ago as in 1856. It is found abundantly, and principally, in the colon of the pig, but also occurs in man, more especially in Russia, Sweden, Italy, Cochin-China, and China, to which here is added Brazil. In Europe, it predominates in the more northern countries, and prevails principally among the peasantry—people in contact with the swine.

In its natural host, the pig, no serious disturbances occur when thus infested, while in man—as we have seen in the foregoing—profuse, obstinate, and exhausting diarrheas are caused by it, very much, we see, as in that other protozoic affection, amebic dysentery. The balantidium is supposed to be protected against the gastric juice by its encysting capsule. Its presence may be discovered by introducing a sound into the rectum, when the protozoa will be found in the adhering mucus.

The importance of Doctor Axter-Haberfeld's announcement, this writer's opinion is, lies in the fact that here we have an instance of emetine being antagonistic to a protozoon belonging to another genus than those of dysentery and of pyorrhea. Furthermore, this discovery is doubly gratifying, inasmuch as heretofore the treatment of the disease has been purely symptomatic (astringents—uzara); while the management now has been placed upon a scientific basis and a cure almost is assured. This should appeal to our readers in some of the tropical countries where this affection prevails, and also encourage them to try it in other forms of protozoic parasitism.

Miscellaneous Articles

Summer Diarrhea. Also an Inspiration from the Columbia Highway

I NOTICED yesterday, while riding over the Columbia Highway, that at a place called Oneata Gorge you can see for a long way between the projecting crags of the gorge if you stoop down and look along the surface of the water. If you stand up, the shoulders of the frowning cliffs that reach from the water to the very clouds hide the view. Now, if, as I said, you stoop down you will be able to see, 'way up the gorge, a little corner of a green meadow or what appears to be a green meadow. And it really is a little corner of an immense green meadow, but one that no one hitherto has ever visited. I will not say that it is so situated that none has ever been able to visit it, but mean that no one up to this time has seen fit to do so. In the center of this meadow, as I understand it, there is a very beautiful city—a surpassingly beautiful city. Its Corinthian columns are the vines and tendrils of the Oregon grape, its walls are rose-leaves, and its roof is of turquoise, but which, I am led to believe, under ordinary circumstances a lot of people mistake for the sky. It is presided over by the God-of-Things-That-You-Want. One of these days, when I have a little spare time and the water in Oneata Gorge happens to run extra low, I may decide to go up there to that charmed emerald mead.

I am led to believe that in a place like that there will be present no summer diarrhea; but, such a place being more or less Elysian and at the same time inaccessible, we must take such measures anent the treatment of summer complaints as time and experience seem to justify.

The most noticeable and interesting thing in connection with the summer complaints of children in this locality is, that during the past few years it has almost disappeared. Twenty-one years ago, when I began to practice here, there occurred many cases each year. The "epidemic" would begin about July 15 and continue, with considerable severity, until

about the latter part of October. The past few years, though, have not seen this program repeated to any very noticeable extent.

This decline in these seasonable diseases is due, I believe, to the present supply of pure milk and pure water, and to a better supervision generally over the foodstuffs that are sold in our city. I was about to say that a more intelligent attention to general hygienic conditions, on the part of the mass of the people, had a lot to do with this decline of the disease; only, I am bound to say (between ourselves) that I have but little confidence in the people in general to take care of themselves. Improvement in the general health of the community along these lines is the result of efforts of the health-authorities, backed by the sentiment and practical efforts of the medical profession.

The several types of digestive troubles that we are called upon to combat are: gastritis, gastroenteritis, acute colitis, and a sort of combination of two or more of these troubles. A somewhat curious thing in connection with the decline of these troubles in this community is, the great apparent increase of acute colitis. It seems to me that about one-half of the cases encountered are colon infections, whereas these formerly were much less frequent—that is, comparatively speaking.

As to my mode of treatment, I fear, I have nothing to offer that is new or so very interesting. The initial dose of calomel and castor-oil has been tried in the crucible of the years and found to be right. I have not the slightest doubt but that the judicious initial purgative dose administered by careful parents and nurses who have been properly instructed by their family doctor has saved thousands of lives. To my way of thinking, it should be given virtually always, irrespective of what the whole chain of circumstances may be in a given case. Where active vomiting is present the calomel should

be given in 1-20-grain doses, often repeated, to a child up to five years of age, until the vomiting has stopped. Ordinarily 1-10 grain at a dose is proper, until the sufficient total quantity has been given. Should the attack be very mild and the calomel act well, it is sometimes proper to omit the castor-oil.

In acute gastritis, one may often have quite a nice little problem to work out. The doctor must know, before he begins with the calomel, whether he has acute gastritis or one of the more serious surgical diseases of the abdomen to contend with; the one condition being very simple, the other attended by the greatest danger.

Should a considerable rise in temperature occur, aconitine and atropine are indicated. These should be given in minute but often repeated doses. I believe that atropine has never yet been accorded just its proper place in the treatment of this class of troubles, for there is seldom a case in which the indications for atropine will not be found. This is particularly true of that grave and dangerous condition named cholera infantum. To my mind, that condition affords a remarkable picture—an extreme picture of the indications for atropine. These remedies will not have a tendency to provoke additional vomiting, according to my observations.

The state of the tongue affords another indication for treatment. A furred tongue (and it usually is furred) calls for the sulphocarbonate of sodium, or the combined sulphocarbonates, according to Abbott and Waugh. It should be remembered that either of these remedies may easily be given to children by mixing it with milk-sugar. A child of one year may receive one grain every two or three hours.

A certain matter here occurs to my mind in connection with the sulphocarbonates. With all due respect to the "inventor" of the combination of the three sulphocarbonates, it is my honest opinion that he does not recommend a sufficiently large dose in the ordinary conditions. My reason for thus "speakin' out" is, that I do not get results from the dosage recommended. When, however, I double this amount or maybe make it three times larger and repeat it oftener, then I do get results. Consequently, I now give to an adult 10 grains of the combined sulphocarbonates every two or three hours for the first two or three days, but "with one eye on his stomach," and for a child of one year I prescribe 1 grain, in like manner. You will see that the dose for the child is just twice that for the adult, under the age-rule.

We are all beginning to understand that it is not absolutely necessary to exclude milk from the diet in the treatment of summer complaint, provided the milk is pure and we do not neglect the Bulgarian lactoid tablet. This ferment is a special boon to the weakly child—which also is the one most likely to be affected. A mite of discrimination is necessary, however, for, if there be certain states of acidity of the stomach, the lactic-acid ferment may do harm. This I believe to be so unlikely, though, that we might add these tablets to our list of unfailing remedies for this condition.

It has "done rained and rained" and our ball-team has a hard time of it, and we cannot see the games, for "they ain't none." My ranch, and the logan-berries that I have there, are doing fine.

J. H. BRISTOW.

Portland, Ore.

[It rains in Chicago, also, and it keeps on raining; but we have baseball games—and good ones, too. Also, we can boast of the most delightful climate, and have mighty little diarrhea among us, thanks to our drainage-canal, our water supply, and a helpful health commissioner, who doesn't want doctors to overwork during the summer months, realizing their need for a vacation once a year.

I have ridden along the Columbia Highway, so, I can visualize that beauty-spot up Oneata Gorge. Still, who but our friend Bristow could find in it a text for the treatment of infantile diarrhea? Good treatment, too, and bound to be followed by excellent results, in steaming eastern cities as well as in the ideal climate of the Oregon Coast.—Ed.]

THE WESTERN MEDICAL TIMES

The reading matter of medical, as of other publications is produced either with the aid of the pen (which is a euphonism for the typewriter), or with the scissors. Both methods require brains. In the former case the journal has to rest entirely on the merits of its original matter; in the latter the original matter is supplemented by the more or less careful reproduction of the results of other workers in the field of medical publicity.

In *The Western Medical Times* for July, the editor, Dr. George L. Servoss, has produced not only a very interesting, but an eminently readable journal, which is characterized by being entirely original. It is "different" in the fearlessness with which it attacks several matters of which the editor

disapproves. Not to mention the courageous and clever defense of that so-called prince of quacks, Paracelsus, it requires courage to discuss so pitilessly the faults and shortcomings of a medical treatise, as is done in the second article, and also in the third editorial.

In the matter of book reviews also the *Times* attempts to set a standard which is beautiful if it can be lived up to. Altogether the number is well written and splendidly edited. We congratulate the contributors and the editor.

HOW I TREAT DYSENTERY, ENTEROCOLITIS, AND OTHER DIARRHEAS

Elimination.—My experience enables me to speak "authoritatively": Clean out, clean up, and keep clean.

Intestinal antiseptics should be strictly practiced; sanitation strictly enforced, as to premises, dwellings, and room; patient's room kept quiet, cool, and well ventilated; company and all other disturbing influences avoided; complete rest, both physical and mental, enforced; patient's body kept scrupulously clean; excreta disinfected and buried or poured into a good sewer, or, best of all, burned; flies not allowed to enter the house, especially the sick-room. The diet is all-important; see to it that your favorite diet list is strictly adhered to. Sweet milk in every form, whether scalded, boiled or peptonized, is to be avoided. Only albumen-water, white of egg in water, is allowed for the first twenty-four or forty-eight hours. Water should be drank frequently, hot water liberally is good. Give parched-flour gruel, rice-gruel, broth or soup of chicken, mutton or beef or beef-extract, when these do not prove too laxative; also buttermilk and liquid peptonoids. Squirrel extract, made the same as beef-extract, is best of all, and especially good for children suffering from colitis; I have employed it for years. Overfeeding is to be strictly avoided.

Nutritive applications.—Fresh unsalted butter rubbed well into the skin, three times every twenty-four hours, all that the skin will absorb, or else pure hog's lard or olive-oil, is fine for emaciated babies and children. Pure corn-whisky externally applied (not given internally) is often a lifesaver, by stimulating and supporting the vitality. This is true notwithstanding the assertion heard, that whisky never acts as a nourishment or stimulant, but always depresses and poisons. Warm the whisky and rub into the skin of the trunk and legs. A good way for babies

and young children is, to saturate soft pieces of cloth with the whisky and place them under each arm; this affording a gradual and continuous absorption. For an adult, one or two tablespoonfuls may thus be applied every one, two or three hours; for children, in proportion. Gauge the amount, frequently applied, so as to steady the pulse and to support the system, avoiding overstimulation. When needed, use the whisky freely in this manner.

I have in mind the case of colitis of long standing, in a child two years old. This baby was very much emaciated and had not been able to take food for some time. I continued these whisky-rubs for weeks, which kept life and strength in the child when so weak, often, that the pulse and respiration would cease, and at times I was forced to resort to artificial respiration. The child now is a grown woman.

Never give up, but work, work, work.

Another child had a catarrhal condition of the bowels. This child, after growing very thin and weak, ceased to take nourishment in any form, and for four weeks food did not enter its mouth. We kept this little girl alive during all this time by means of the applications of whisky. It is needless to cite other cases. While the whisky will nourish and stimulate, it will not keep up the bodily warmth; hence, hot-water-bags or similar devices must be kept near the patient.

Tympanitic distention and pain of the abdomen.—Two or three times daily rub over the bowels a mixture of oil of turpentine, camphor, and lard; also keep applied a hot peach-leaf poultice. This is especially good for children.

While the fever is active, sponge the body frequently with a solution of epsom salt.

For exhaustion, nutritive enemas are more likely to be retained by adults. Antiseptic and astringent enemas and bowel flushings prove of great service, but overdistention of bowel must be avoided. Antiseptic and healing enemas, as of oil of turpentine in olive-oil, and retained, may be necessary. For the gas, pains, and so on, give enemas or tincture of asafetida, oil of turpentine, of kerosene.

Consultations.—To help the patient and aid the regular physician in charge, when needed or desired, call in a real doctor, one who is acquainted with his medicines and who believes in them. Avoid the self-constituted "stomach-specialist" who does not believe in medicine. If a "stomach-specialist" is desired, get one who not only believes in proper

diet, but one who also believes in medicine and knows how to use it. Generally the so-called stomach specialist voices the now obsolete cry, "I do not believe in medicine"—a confession that he knows nothing about medicine. He then proceeds to discuss what he thinks he knows about the germ- and the diet-theories, with all of which the physician in charge is perfectly familiar. This wise guy persists in discussing the all-curative power of diet—his formula, of course—in opposition to the medicinal treatment. He does not know of or advise a single remedy for the relief of anyone of the acute symptoms, though he calls himself a doctor; crying diet, diet, when the child cannot eat, when the agonized father appeals to him to relieve the sinking pulse, the burning fever or threatened convulsion, while the heartbroken mother extends her arms as if to hold the little sufferer yet awhile longer with her, while praying with all her soul for the return of the lifetime to the little one.

C. W. HUNT.

Brevard, N. C.

THE GOLDBERGER THEORY OF PELLAGRA

With reference to your editorial comment, in a late issue of *CLINICAL MEDICINE*, on the "Goldberger Theory" on the etiology of pellagra, I wish to state here that before Doctor Goldberger promulgated his theory I was fully convinced that pellagra was caused by a onesided diet. Moreover, when one takes into consideration the economic factor, he cannot fail to appreciate Goldberger's views and the far-reaching importance of his investigation.

In this locality, as in most of the cotton-producing country, the cotton is raised by renters or sharehands. These tenants are furnished their necessities by the landlord or by some merchant who holds a mortgage on the prospective crop. The tenant, as a rule, is furnished little besides cornmeal, "fat meat" which usually contains little or no lean (in other words, bacon), compound lard, molasses, and snuff and tobacco, besides, sometimes, coffee and sugar. If any person has to live on this diet, from March 1 to cotton-picking time in October, before he can get the kind of food he really wants and requires, is it any wonder that a chronic disease such as pellagra is on the increase? I do not believe that sanitation has a thing to do with it, for, the people who live under good sanitary conditions and are able to

supply themselves with other things to eat besides cornbread and fat meat and molasses are not subject to attack.

I am not condemning the idea of good sanitation, drainage, housing, screening, and so on, but I see no need of attributing all disease-condition to bad sanitation, when the economic situation is at fault. The man who owns his farm, and is free of the crop-mortgage system very seldom is a victim of pellagra; but, when he is, if he then is put upon a proper diet, there is no question as to the outcome.

I have had under treatment about thirty cases this year and have three bad ones under my care at present. I have been treating from twenty to fifty pellagra-patients each year for several years, and I think I am better able to express an opinion than the man who sees a case of pellagra only occasionally.

J. F. HILBURN.

Moscow, Ark.

[This argument in support of the Goldberger theory of the origin of pellagra is well taken and evidently is dictated by the results of close clinical observation. We are far from denying the importance of faulty nutrition as a causative agent in the production of this disease; our position is, that the *relative* importance of this subject is not yet established.

So far as we can see, the factor of faulty nutrition possesses the dignity of a contributing or predisposing cause, and we must look further back for the primary cause of the disease. The same role is played by faulty nutrition in the development of other wasting diseases, most notably phthisis, of which it was held to be the principal cause at one time. There is nothing surprising in the fact that improvement follows in pellagrins when a more suitable dietary is arranged; the same is seen in all disease in which malnutrition and its various sequelæ are of importance. Nevertheless, this fact is not sufficient to establish poor nutrition as the sole etiologic agent in the causation of pellagra.

Referring to the exhibit made by the Post-Graduate Medical School and Hospital, at the late meeting of the American Medical Association in Detroit, we cannot understand how anybody who studied this exhibit and who spoke with Doctor MacNeal or one of the other men in attendance could fail to be impressed with the great value of their investigation. This report is based upon a careful individual, social, and epidemiological study, by trained investigators, of 847 cases

of pellagra occurring in Spartanburg County, South Carolina. The advantages of studying all the evidence that can be secured in a circumscribed neighborhood, but where yet sufficient variations prevail as to locality, social condition, mode of life, occupation, and the like, are obvious. The fact that the members of the commission were particularly adapted for their work by special training and that they had every possible aid and assistance at their command is also to be taken into consideration in evaluating the importance and bearing of their findings.

The fact was established that, with very few exceptions, pellagra occurred in persons living in houses in which pellagrins had lived before them or in persons who had lived in close contact with pellagrins; the conclusion is that association is a factor, in the spread of pellagra, of much greater importance than has previously been assumed. The conclusion also is warranted by their findings that, in the mill-villages investigated by the commission, pellagra in some way is transmitted to non-pellagrous persons from a preexisting case, and that one of the important factors in this transmission is, residence in the immediate neighborhood of a pellagrin.

The endemic character of pellagra in villages where unscreened surface- or privies for the disposal of human excrements are in general use, and, reversely, the fact that pellagra did not occur endemically in other villages in which every house was provided with a water-carriage flush-closet connected with a sewer, as well as other similar observations, have compelled the investigators to regard inefficient methods for disposal of human excrement as an important epidemiologic feature in those communities in which pellagra is endemic.

In our endeavor to maintain an open mind in the study of this important disease, we are impressed by various considerations: Doctor Goldberger regards the fact, that six out of eleven convicts who had been put on a certain badly balanced diet contracted an affection diagnosed as pellagra, as sufficient evidence to justify the assertion that the cause of pellagra no longer is in dispute. The members of the Robert M. Thompson Commission point out only those conclusions that are fully justified by the results of their studies. They do not pretend that they have found the ultimate cause of the disease, and make full acknowledgment of the contributing importance of malnutrition from a badly balanced diet as an associated causal factor.

It seems to us that the work of a commission, carried on under the conditions obtaining in the investigations of the Pellagra Commission, is deserving of credit, and it behooves us to wait patiently for their final verdict, keeping in mind that this can not be rendered probably for years.

In the meantime, it is for us to adopt that treatment which has given the best results, including that of promoting a full and normal nutrition by regulating the dietary; also, to make use of those drugs (antiseptics, in the main) which aid in removing from the intestinal canal all offensive and septic material and in healing intestinal lesions. For the present, the treatment of pellagra must be directed by general principles; in the course of time, we may hope to find specific remedies. But, even if we do, close attention to the nutrition will always be one factor of primary importance.—Ed.]

"THE MODERN HOSPITAL" AND INDUSTRIAL WELFARE

We admire *The Modern Hospital* as a remarkably beautiful and fine journal which has a wide scope of interests, and covers many diversified phases of hospital activity, including social service. We are informed that the August number is devoted to a symposium on welfare work among the industrial corporations of the country, and contains editorials as well as special papers upon the subject by men and women who are fully qualified to write upon them, because of special studies and investigations. Among the topics discussed are those of first aid industrial nursing, lunches and diets for industrial employees, safety devices in factories, and athletic and social clubs for employees.

In the opinion of *The Modern Hospital*, welfare work should aim to secure three things, namely, to make employees healthy, comfortable and happy, increasing thereby their efficiency; to help them to provide for sickness and disability; and to provide entertainment and recreation. The journal also attempts to eliminate features of industrial welfare which are believed to be undesirable, and to emphasize those best suited to the needs of the American public. We congratulate *The Modern Hospital* on its own excellency and efficiency.

THE TREATMENT OF MALARIA

Too many of us think that, because quinine is recognized as a specific for malaria, all we

have to do is, to give quinine, and then more quinine. Some of the worst nervous wrecks I have ever seen were made such by the excessive use of quinine. Others of us go a little further and think that we always must begin the treatment with a good calomel-purge; then proceed to give from 8 to 12 grains of calomel, and, if the tongue still stays furred, we repeat the dose—literally “ad nauseam.”

Now, both of these things are essential: although not always the calomel. In fact, in my experience, it is but rarely necessary to give the calomel or any other mercurial, or, if at all, only in very minute doses, say, 1-10 grain at short intervals until 10 doses are taken, following this with a brisk laxative saline. This method gives me more satisfactory results than does heroic dosage. The quinine, while essential, should not be given in large doses. From 1 to 1 1-2 grains every two hours will do the work as effectually and with more comfort and less untoward results to the patient than will many times that quantity.

All malarial patients require acids, so, I include in my dietary list all acid fruits, pickles, tomatoes, and the like, and, in addition, prescribe hydrochloric acid in some form, preferably with essence of pepsin, after meals. Try this, and see how grateful a patient can be; also, witness the happy results obtained.

Do not starve malarial patients. I restrict the diet but very little, but am governed largely by the appetite. If the patient is hungry, I allow him to eat almost anything he wants; if he is not hungry, I do not force any food upon him. The next time you are tempted to give a calomel-purge, ask your patient whether he would like to make a full meal on green corn. If he says yes, let him eat all he wants, and charge the corn to me if you don't get a better effect than you would from your calomel.

That old chronic case of malaria that will not yield to quinine in any-sized doses cure with this prescription:

Potassium nitrate. dr. 1
Ferrous sulphate, exsiccated. dr. 1
Nitrohydrochloric acid. drs. 6
Mix, warm slightly, let thoroughly digest, then add:

Liquor of potassium arsenite. drs. 2
Directions: Take 7 drops in plenty of water, after meals. [Suck through a glass tube, and, after a swallow of water, quickly rinse the mouth and *teeth* with a weak solution of sodium bicarbonate.—Ed.]

If you are a country doctor and have to furnish your own medicine (as I used to do),

and you have a charity-patient whom you do not want to take up much of your time and you want to cure right quick, so as to get rid of him, tell him to buy a bottle of quinine, then to measure out one level teaspoonful of it, divide this into four parts, and to take one such dose in a teaspoonful of good apple-vinegar every two hours for two or three days. Also, to take a tablespoonful of castor-oil every night. Then you can go home and sleep the sleep of the just, conscious that you have done a good deed to a fellow way-farer in this vale of tears.

Warning: Do not give this advice to your good pay patients, lest they think that they cured themselves and feel disinclined to pay your bill.

Fully half of my patients are victims of some form of malaria. The treatment outlined will cure them here; it may not do so well further down south, but I believe that it will.

E. H. BOWLING.

Durham, N. C.

MALARIA AND DYSENTERY

I am resting this summer and feel lazy, so, your letter was quite welcome. One or two definite questions of yours are easy to answer.

Malaria.—My experience with malaria, in hospital and private practice, in the Philippines and in Florida, leads me to the following conclusions:

1. Every case of benign tertian, malignant tertian, (remittent or estivoautumnal), or quartan malaria can be cured with a single dose of quinine, provided the following conditions are observed: (a) The dose must be large—20 to 30 grains. (b) It must be given at the right time—six to twelve hours before the chill. (c) It must be single. Cases which have been treated with repeated small doses of quinine are not amenable to the single-dose treatment. (d) Cases of double or multiple infection are to be considered as separate cases, though in the same patient, and are treated accordingly. For example: A case of chills occurring every day, but at 10 a. m. and at 3 p. m. on alternate days, evidently is double tertian. This patient should get one dose of quinine on retiring the night before the 10 a. m. chill is expected, and a dose at 9 a. m. (or earlier) on the morning of the 3 p. m. chill day. (e) The quinine must be in readily assimilable form. Some quinine pills I have tried could be driven with a hammer into a board without

cracking them. They passed through the patient in the same unvanquished state. Friable tablets, powders, capsules and suspensions all are good, but the first-named are far more pleasant for the patient to take. (f) When putting a single dose of medicine into a stomach and depending on it to do anything, it is a good idea to be sure that the organ is in working order. I once found, at necropsy, some unchanged quinine tablets in the stomach of the corpse.

2. The single large dose given as here advised is harmless and never produces cinchonism, unless it is repeated.

3. Most patients can be cured with small doses, many even with minute doses, but, (a) It takes longer. (b) Repeated small doses (2 to 5 grains) usually produce cinchonism before they cure. (c) Many sufferers cannot be cured with small doses, because a strain of plasmodia has been developed that is resistant to quinine. Such cases result fatally or become chronic and run into cachexia. Some of them are amenable to arsenic, but a case which has been immunized to quinine is very difficult to cure. Oleoresin of capsicum is a very good tonic, but it is better as a preventive than as a cure.

4. There is a form of tertian malaria that is very fatal and not amenable to quinine in any dosage, but which can be cured just as promptly and certainly with nuclein. This form fortunately is unknown in Florida and rare in the Philippines, but I have heard that it is comparatively common on the west coast of Africa.

5. The foregoing applies to the sulphate of quinine. I have not studied any of its other salts in malaria.

6. The initial chill in a recent sthenic case may be broken up and the attack aborted with pilocarpine, 1-3 grain hypodermically. Later, and in an asthenic case, pilocarpine is too depressing, and, if used at all, should be strongly guarded with strychnine.

Dysentery.—Clinically, there are only two kinds of dysentery. If the onset is gradual, the course chronic, the blood loss small, the discharge of mucus large, then the case is amebic.

Treatment of amebic dysentery: Emetine, 1-2 grain hypodermically, and alphozone administered in enemas. Either of these two remedies given as above will cure, but both together cure in less than half the time when given singly.

Emetine acts through the blood, and only so. It is doubtful whether it is of any use locally, except as it is absorbed into the

blood. It cannot penetrate the mucus or the cysts that enclose the amebas.

Alphozone acts locally, and only so. It is an oxidizing agent and an amebicide of great power. It dissolves the mucus and the cystic envelopes, and destroys the amebas in these strongholds better than will anything yet discovered, so far as I know. I have not found it satisfactory given internally. It must be applied locally in solution of sufficient strength—1 : 1000 at least. Alphozone is harmless in any degree of concentration. It is better than emetine as a local amebicide in pyorrhea. It has the unpleasant metallic taste of the peroxides.

A sudden onset, acute course, much blood, and comparatively little mucus indicate *bacillary dysentery*.

Thymol is useful in both forms of dysentery. It is a bactericide, and it kills amebæ by destroying their symbiotic bacteria. The cleanout and cleanup process obviously is important as an introductory as well as adjuvant treatment. The combined sulphocarbolates with thymol I have found the best medicine to give by mouth.

CHARLES F. MORRISON.

Apopka, Fla.

A FLORIDA COLONY FOR AGED DOCTORS

On page 562 of *CLINICAL MEDICINE* for July, we referred to an offer, made by Dr. A. T. Cuzner, of Gilmore, Florida, to donate four acres of land as a nucleus for a colony where retired physicians might spend the evening of their lives in beautiful surroundings and in the congenial association of their kindred. By a strange coincidence, Dr. A. R. Hollman, resident at La Ceiba, Spanish Honduras, makes a similar offer; which, however, is appropriate more for younger men still physically vigorous and capable of pioneer work. For the aims and purposes outlined by Doctor Cuzner, his suggestion appeals to us as eminently feasible and practical; also as very desirable. Being situated very near to Jacksonville, the place is easily reached, while the conditions of living seem to be ideal. But, we will let Doctor Cuzner speak for himself, who, in a recent letter, writes:

I have delayed writing, for lack of preparedness, the subject-matter being a sanatorium and homes for old doctors, where the latter might enjoy the 'last years of their lives.

I proposed to donate land for that purpose. This land is situated on the banks of the St. Johns River and about ten miles distant from the Atlantic

Ocean. When the wind is from the northeast, we can hear the roar of the ocean-billows as they strike against the shore. The land lies four miles from the ferry to Jacksonville. I enclose a few photographic views, marked to indicate from which direction they are taken.

The land at the river-bank is a high bluff, at the bottom of which is a sandy beach excellently suited for bathing. There is good fishing almost all the year around. I also enclose Professor Mitchell's data concerning the climate and temperature conditions. Now for a suggested plan.

First: I am to donate the land.

Second: A company is to be formed, to consist principally of doctors. Capital is to be obtained by subscriptions to stock, and each physician subscriber is allowed, to the extent that the plot of land donated will permit, a site for a permanent home cottage. A sanatorium is to be built where patients can be treated for moderate charges. Cottages could be erected and rented to physicians for winter residences.



Dr. A. T. Cuzner

From among those physicians who are permanently located on the grounds, a medical staff could be formed to treat such patients as occupied the sanatorium-building.

Outbuildings or offices could be erected where cooking and other necessary work could be performed. Boats could be owned privately, and also provided by the association for hire.

There is no doubt in my mind that charitable wealthy citizens of Jacksonville would endow a number of beds.

As to how funds could be raised to build, I would leave that to those who may favor the enterprise. I should like CLINICAL MEDICINE to take the matter under consideration; also *The Medical World*, *Medical Standard*, and *Medical Summary*. Doubtless, enough physicians would be found among the 150,000 subscribers of these four magazines to become partners in this enterprise.

I am about to enter upon the 78th year of my life, and I believe that I have



Looking Northwest

reached this advanced age largely as a consequence of my residence for twenty-seven years in this healthy locality. I am like an old soldier and I like to fight my battles against disease over again—discussing them with others. Congenial company is what I most desire, hence, my willingness to donate this land.

A. T. CUZNER.

Gilmore, Fla.

The climatological conditions prevailing in Gilmore are practically the same as those for Jacksonville. Under normal conditions, the climate is equable, although there often are clear, cold, bracing days in winter and high midday temperatures in summer. Early spring and late autumn are the most pleasant seasons of the year, as they are characterized by moderate temperatures and a greater percentage of clear skies. While frost is experienced occasionally—and we remember having felt good and cold in semitropical Florida—real winter weather is the exception. Reversely, in the region where Doctor Cuzner's land is located, summer does not



Looking Northwest toward the Ocean

degenerate into gehenna, the highest mean temperature for any month between 1871 and 1907 never having exceeded 86 degrees.

The peculiarities of the soil, added to those of the climate, make it possible to grow there some sort of a crop all the year round, and those who like to till the earth will find ample opportunity in that respect. The proximity of the water, too, will prove powerfully attractive for many physicians, to our personal knowledge.



Looking South from the Bank

Altogether, Doctor Cuzner's scheme "likes us mighty well" and we sincerely hope that it will come to a splendid fruition. If there is room for medical journalists, even though these fellows never grow old, but just drop out and die, we hope to find a chance to go down there some day, for a vacation. We might show the "colonists" how *CLINICAL MEDICINE* is edited; or, at least, something about it.

Any physician interested in this plan should write directly to Doctor Cuzner, who will be glad to hear from everybody who has a suggestion to offer as to how best it can be made a success.

PHYSICIANS' BOOK PLATES

Dr. H. J. Achard, Ravenswood, Chicago, informs us that he intends to prepare a check list of book plates owned by medical men, including dentists, in the United States. Doctor Achard will be grateful for contributions from the owners of book plates, in so far as he does not already possess them; he requests that the names of the designer and of the engraver be noted on the back of any plate that is sent to him. The preparation of this check list will take a rather long time,

as the work is to be done only during leisure hours but it is hoped that it can be accomplished in the course of the coming winter.

It is desired to include, as much as possibly, bookplates of medical libraries, medical colleges and other medical institutions. Collecting bookplates is an interesting hobby and was sanctioned by the late Dr. Roland G. Curtin.

HOMEOPATHIC REMEDIES IN THE COLIC OF INFANCY

Not every attack of paroxysmal abdominal pain in a little child is colic. When the pain is associated with vomiting, collapse, the discharge of clear mucus and blood, and abdominal distention, I think of intussusception and search for a sausage-shaped tumor; also make a rectal examination. If in addition to the usual symptoms of colic there is marked rigidity of the abdominal muscles, especially of the right rectus, the thought is of appendicitis.

When convinced that the little patient really is suffering from colic, relief of pain is of first importance. As a routine remedy, Waugh's anodyne for infants is certainly fine. I clean out the bowel at once with a high enema of a temperature 110° F., then apply hot fomentations to the abdomen and to the feet. If there is much abdominal distention, with constipation, atropine sulphate, 1-10,000 grain every ten minutes, is effective.

If, besides the pain, there is looseness of the bowels, give tincture of chamomilla, 1-24 drop every ten minutes.

If it appears that the colic has come as the result of exposure to cold, give colocynth, 3rd homeopathic dilution.

When the pain evidently is the result of indigestion another homeopathic remedy often proves effective namely, nux vomica, 3rd dilution.

If the child is well nourished and the pain is somewhat relieved by heat and pressure, one of the tissue remedies, mag. phos., may be prescribed with confidence. Dissolve 10 grains in a teacupful of hot water and give a teaspoonful every ten minutes, until relieved.

Having ministered to the most urgent need of the child, one must take time to study the basic cause of the colic. This may be too much milk at a feeding, too rich milk, too frequent feeding. Or the cause may be in

defective bowel action. Not infrequently improper diet of the mother or her failure to take sufficient open-air exercise is at the bottom of the child's suffering. While it is not within the plan of this brief communication to discuss the feeding of infants and the correction of constipation, I want to add, in closing, that some trying cases of intestinal indigestion have been greatly benefited by galactenzyme, one tablet added to each feeding.

Bellevue, O. H. K. SHUMAKER.

MORE DOUBLE TWINS

I notice that in the June issue Dr. Laura M. Plantz has submitted a photograph of a double monster. Here is one to match it, photograph of the twins preserved in alcohol being presented herewith. These were negro babies and were born February 2, 1915, the weight of the pair being sixteen pounds.



Doctor Durnham's case of double twins

They were stillborn, but I had very little trouble in making delivery. The mother was a multipara and in her seventh confinement. She made a perfect recovery.

Both of the children were males. They were attached from the neck to the navel, and had but a single cord.

W. P. DURHAM.

Sasser, Ga.

STRUCK BY LIGHTNING

On the evening of the 10th of June last, three young girls were out in the field, when an electric storm came up and a vivid stroke of lightning struck one of them, Ruby, 11 years of age. She was holding her hat with her right hand. The wave of lightning struck her right wrist, burning off the epidermis over an area of some two inches square, then scalding the arm up to near the shoulder, where the epidermis was burnt off for about 4 by 3 inches. Her right cheek was blistered badly. Her right side, under the arm, had the outer skin burnt off over some 5 inches square. Then her whole side for some 6 inches wide, down to the hip-bone, where it spread out over the buttock and the groin. Then it narrowed down and wound around to the back of the leg, blistering it, and tore off the shoe of her right foot, lacerating the bottom of the heel to the astragalus about the size of a silver quarter and causing a contused wound in the ball of the foot. The left leg was burnt and blistered from the knee down, and the left shoe was split in three places, while the foot and toes of the left foot were badly scalded.

The girl was unconscious at first and when she first came to was deaf. Her 12-year-old cousin Annie was shocked, but had the presence of mind to raise Ruby up and turn her over and rub her. Then it began to rain and hail, and this, together with the aid that Annie rendered, saved the child's life.

I was summoned and arrived at the bedside in about one and one-half hours. I found Ruby suffering from severe pain in her heel, very nervous, her heart very feeble, and showing symptoms of collapse; besides, of course, the conditions described above. I had her body rubbed, gave digitalin and strychnine for the heart; morphine sulphate, 1-16 grain, to relieve the nervousness; and instituted antiseptic treatment for the lacerated heel.

I am glad to be able to say that the girl has regained her hearing and is gradually recovering her strength. She has returned to her home in Roanoke. The other girl, Annie, easily recovered from the shock experienced. The third companion was unscathed. There were no trees, fence or other objects within

thirty yards of the scene of the accident, and there was no sign that any object near was struck.

J. K. SIMMONS.

Nace, Va.

[Fortunately these cases are rare. Doctor Simmons treated this case along the right lines and is to be congratulated on the outcome. When there is loss of consciousness, the physician who has a lungmotor or pulmotor at hand is fortunate indeed; in lieu of such an apparatus, practice artificial respiration by the usual methods. Atropine is the best stimulant of respiration, and glonoin, digitalin, and strychnine are the indicated remedies for cardiac feebleness. Heat should be applied to the extremities if they are cold and if signs of shock are present. Have other readers had experiences of this kind? We shall be glad to have their reports.—Ed.]

THE AMERICAN ASSOCIATION FOR THE STUDY OF SPONDYLOTHERAPY

We are informed that The American Association for the Study of Spondylotherapy will meet in Chicago, Illinois, on September 18 to 21. The programs are to be issued soon and can be had by writing to the secretary-treasurer, Dr. S. Edgar Bond, Richmond, Indiana.

This Association, which deals particularly with the study of reflex, clinical and physical therapeutics, is made up by men who are very much alive and who are accustomed to do things.

We are glad of the fact that they are to meet in Chicago, where we shall treat them cordially, and we hope that all the physicians attending the meeting will remember that our latchstring is always out. Take any Ravenswood car line, preferably the elevated, and come and see us.

AN ANTISEPTIC DRESSING

I have been a subscriber of *CLINICAL MEDICINE* for a long term of years. We have corresponded a little at times on sundry matters, but this was years ago. I have never burdened your desk with indigestible, incompatible pipe-dreams of the medical novice nor jumped on your contributors with a hatchet because they—had an impediment of speech. For these reasons I am asking you to do humanity and me a service by rushing the enclosed prescription to the

front That means all belligerent nations' You are in a position to do this with greater ease and certainty than I could. So much for the prelude. Now, here is my formula for an antiseptic ointment:

Petrolatum.....	lb. 1
Zinc oxide.....	ozs. 4
Creolin (Pierson's or any other good creolin).....	drs. 4

For use, spread this ointment on a cloth and apply to the wound.

Now, doctor, this matter is so simple that I am offering that as an excuse for not writing a brief article on the subject long ago. I supposed that others would blunder onto the same thing if necessity demanded it.

I have used this preparation for twenty or more years in minor surgical practice, gunshot-wounds with fracture of bone, compound fractures and the like included, and it has never failed of fulfilling in every instance the highest ideals of a perfect antiseptic dressing. It will keep indefinitely, does not separate or deteriorate in any climate.

A screwcap tin or zinc box containing one or two ounces, a 2-inch gauze roller, with a small piece of heavier material, to make the plaster covering the wound of entrance and exit, will constitute an outfit for the soldier, to carry which will absolutely prevent all infection of wounds. There will be no inflammation whatever, and there will be great relief from pain. Of course, the main object is, to prevent infection, but the soldier could be instructed regarding the importance of not washing the wound and bandaging and compressing so as not to allow much blood or serum to accumulate in the tissues. Simply press out and recover at once.

It will not take you more than twenty-four hours in a city like Chicago to test this dressing. I assure you that nothing better can be desired.

I hear that they are using ampules of iodine tincture with an iodide, a wad of cotton and a bandage. The above preparation is circles of the earth ahead of it. Serums, cultures, vaccines, and antitoxins have befuddled the entire medical world. How long will it last?

JAMES M. CALLENDER.

Panama City, Fla.

[The "family" can supply the "clinic" needed to give Doctor Callender's antiseptic the try-out needed to demonstrate its merits—or its demerits. Suppose about a thousand of you make the necessary clinical tests.

I'm sorry that the doctor has such a poor opinion of "vaccines and antitoxins." The great war in Europe has triumphantly vindicated all the claims made for them. They are not cure-alls, but in the field of prophylactic medicine they are certainly supreme. Ever stop to consider *why the soldiers are not being decimated by typhoid fever, cholera, and typhus in this war?*—ED.]

DOMASHING VRATCH—THE HOUSE PHYSICIAN

The House Physician—we take the liberty of suggesting "Household Physician" as coming nearer the purpose of the publication—has come to our desk in its first number, for July, 1916. This is a popular publication in the Russian language, the only popular medical publication in that language in the United States. The editors and owners of the little journal seem to be physicians, and it is intended for lay reading and lay instruction in sanitary and hygienic matters.

The review editor is informed that the articles in the first issue deal with the care of babies and with problems of food and health; there is a story or two, and several poems lend variety to the more serious discussions. We are informed by a Russian friend that the articles are very good indeed, and the evidence of our good friend, Dr. George F. Butler's picture as a frontispiece, bears out this judgment.

We wish the editor, Dr. Henry R. Krasnow, and his associates success in their undertaking to enlighten their countrymen in matters pertaining to hygiene, sanitation and domestic medicine.

LINSEED FOR HABITUAL CONSTIPATION

For the past twenty-two years, I have been looking for a good remedy for the relief of constipation, this "oldtime bugbear" of the medical profession, but until recently I have found none that was satisfactory. Not that I feel that I have given the remedy to which I am going to call attention sufficient trial to proclaim it a cureall, nevertheless, it has proved so satisfactory in a number of old chronic cases in which everything else had completely failed, that I must tell about it and ask others to try it or if any have already done so to report their experience.

The remedy is nothing else than oil-meal, or ground oil-cake, the common stock-food.

I instruct my patients to have a small bowl of it standing in a handy place and to eat from five to ten teaspoonfuls during the day. The meal is eaten dry, and the amount increased or decreased, according to its effect.

I now have in mind a lady who had not had a natural defecation since she was in her teens, and she is now about 40 years old. She had been obliged to take a physic of some kind all the time, and as one ceased to act, she would change. Diet and water drinking, and all the other expediences in the usual and unusual category were tried, but to no avail. Russian mineral oil and American oil-emulsion for a time were equally as effective as the other remedies. All failed. She was then advised to try the oil-meal. For two weeks, no effect from the oil-meal was visible. Then—wonder of wonders—she began having natural bowel movements, and these have continued ever since.

Another case was that of a young woman 25 years old, whose occupation compelled her to sit much of the time. She had been habitually constipated and was discouraged, and thought she must suffer thus the rest of her life. Through another of my patrons, whom I had been able to benefit for the same trouble, she was induced to consult me. I put her on emulsion of Russian mineral oil. This benefited her for several months. Then, however, she had to submit to a surgical operation and while she was confined in bed her old difficulty returned. I thought that we could easily overcome this, when she was up again, but now the mineral oil did her no good. Then I put her on the oil-meal, and now she has regular daily movements.

I might cite several other cases, but these two will suffice to illustrate my experience so far, and I trust it will induce others to give this expedient a trial. Use the oil-meal in conjunction with the other lines of treatment that have proved themselves of some value in your hands.

F. E. BRAUCHT.

Coleridge, Nebr.

[Pure linseed-meal, from which the oil has not been extracted, has long been a popular remedy for constipation. One enterprising manufacturer of breakfast-food has even put on the market a preparation containing a generous proportion of crushed linseed. There is no doubt as to its efficacy; the objection to it is, that the taste of the mixture soon becomes disagreeable to many of us and at last actually disgusting to some. We speak from personal experience. At first we

liked the food, then it caused eructations, and actual dislike was the final result, so far as we personally were concerned; and we understand that others have been similarly affected.

In a later letter, Doctor Braucht acknowledges the truth of this criticism, saying that the majority of users he knows of complain of disliking this food and soon becoming tired of it. However, he thinks the objection can be overcome by devising a better combination, and instructing people to use it in relatively small doses as a medicine, rather than as a nutrient. We are glad to submit this idea for some enterprising manufacturer to develop.—Ed.]

SOME HAPPY EXPERIENCES WITH EMETINE

I wish to report my experience with two or three cases in which that very efficient alkaloid, emetine, was used with very satisfactory results to me and to my patients. Here they are:

Mrs. H., age about 58, for the past twenty-five years had been bothered more or less with blood in the urine. At times the condition was so bad that she passed pure blood, which would clot. There were occasionally intervals of a few days when no blood was noticed in the urine, but these never lasted more than three or four days. I made an examination, using a catheter, to be certain that the blood came from the bladder.

I put this woman on emetine hydrochloride, administered hypodermically, giving 1-2 grain daily for a time, then every other day, then every third day, and finally at weekly intervals, using in all twenty-eight ampules. The blood soon ceased to appear in the urine, examination of the urine proving negative. Some seven months have elapsed since the treatment was discontinued, and there has been no recurrence to date.

Mr. C. J. C., 67 years old. Suffered from trifacial neuralgia of a severe type. Touching the face on the left side caused severe pain. There were paroxysmal attacks of pain several times daily, and without opiates of some kind he was unable to eat or sleep for days at a time. The lips seemed worse than any other portion of the nerve distribution, although the supraorbital region was very painful. Patient confined to his bed most of the time. He began having trouble in December, 1915, and I saw him for the first time on June 18th.

I made a diagnosis of pyorrhea alveolaris. I began immediately to give him emetine hydrochloride, 1-2 grain daily, and sent a dentist to the house to clean up his teeth. I also gave saline laxative, sulphocarbolates, and strychnine in 1-15-grain doses every other day, and prescribed an easily digested but nutritious diet.

The pain became less from the very beginning of treatment, and I have never had to give him any medication for the relief of pain. He is now free from pain, has gained seven pounds in weight, has a good appetite, and is regaining his strength rapidly; he calls himself a cured man. I shall continue to give him weekly doses of emetine for a few weeks before discharging him absolutely.

Miss C. Has been very particular with her teeth, and has scrubbed and brushed them after each meal. She suffered from rapid heart-action after eating, had been gradually losing weight for the past four months, and was bothered with gas for several hours after meals. She was constipated, had fainting spells, vertigo at times, and seemed to lack energy or desire to do anything more than just stay at home. Examination resulted in a diagnosis of pyorrhea alveolaris.

I administered emetine hydrochloride every day for four days, then every other day for eight days and then every third day up to the present time. Her appetite is improved, her heart does not bother her any more, and the troublesome gas is a thing of the past. She is gaining in weight and strength and considers herself very much better.

These are a few of the many happy results I have been getting from emetine in the past year or so.

L. V. DAWSON.

Plainview, Tex.

[The beneficial action of emetine in neuralgia is of great interest. Some of our readers may have seen in the April (1916) number of *CLINICAL MEDICINE* the abstract of an article published in *The Long Island Medical Journal*, contributed by Dr. Alexander C. Howe, who gave his experience with emetine used in the treatment of this condition. Doctor Howe found the emetine effective in cases of this kind in which it was difficult to find any direct connection between the preexisting pyorrhea and neuralgic pain. I hope some of our readers will follow up this pointer and let us know the results obtained. There are many of these resistant cases of neuralgia and neuritis drifting around the country and from one doctor to another,

many of them finally falling into the surgeon's hands.—Ed.]

THE TREATMENT OF ACUTE GASTRO-ENTERITIS IN CHILDREN

Acute gastroenteritis usually is caused by errors in diet, and under improper feeding may be mentioned unclean nursing-bottles and nipples, and contaminated milk and milk-modifiers. I need not dwell here upon the symptoms; what we want is, results.

In conditions of this nature, my usual procedure is, first of all to stop all foods. Then, if it is a bottle-baby, I tell the mother to procure Dennos' food, which, in my opinion, at the present time is the best milk-modifier on the market, having prescribed it for now nearly three years with astonishing success. I instruct the mother to mix one cup of fresh milk and one cup of water and allow this to come to a simmer, but not let it come to a boil. Then she is to add a pinch of salt, a teaspoonful of granulated sugar, and one teaspoonful of Dennos' food—the latter previously dissolved in water—and then to stir the mixture for five minutes. When cool, it is drained off into bottles, ready for feeding. Of course, the proportion of milk to water is changed in accordance with the baby's age.

To each feeding, depending upon the severity of the diarrhea, I have the mother add one or two of Abbott's Bulgarian bacillus tablets. (Here I may interpolate that I have been very partial to Abbott's preparation after having used a number of others. I must say that the Bulgarian-bacillus tablets as prepared by Abbott have always been found by me strong, virile cultures.) Finally I give instructions that the baby be fed from 4 to 6 ounces of this mixture every two to three hours.

Should the baby be older, so that it is also teething, I then prescribe of the Schuessler tissue remedies the calcarea phos. 3X, three tablets every two hours. If the child should vomit very much and exhibit considerable disturbance of the stomach, the giving of a mild laxative, and with an alkaline corrective, has proved beneficial. For instance, I may order the following prescription, changed according to the age of the child:

Fluid extract of leptandra. drs. 2

Syrup of rhubarb and potassa. drs. 4

Syrup, enough to make. ozs. 3

Directions: One teaspoonful three times a day.

I believe that the excellent results that I obtain must be ascribed entirely to correcting the feeding, using a milk-modifier

(such as I do), and counteracting intestinal fermentation by giving with each feeding a Bulgarian-bacillus tablet. The foul odor of the stools soon disappears and normal yellow movements result.

WILLIAM F. SCHAARE.

Chicago, Ill.

GALENICALS THAT "WORK WITH CLOCK-LIKE PRECISION"

Dr. W. J. Robinson, in *The Critic and Guide*, settles the argument in behalf of the galenicals in a very few words. In the October, 1915, number of his little journal, he says:

"The editor of *Physicians' Drug News* says that he would not be willing to throw away those 'galenical preparations that work with the precision of the clock.' Neither should we. But we should very much like to know the names of the galenicals which work with 'the precision of the clock.' We are afraid there aren't any such."

Since it seems to appear to you that in the above, which I quote from *CLINICAL MEDICINE*, the last word has been said, will you kindly reprint it with the following added, and do justice to us all:

The above, from *The Critic and Guide*, seems final, but it isn't, since we can at least retaliate with castor-oil, and have as good an authority as Doctor Hare to back us.

Hare says concerning castor-oil: "Its action is so regular, it can almost be used as a timepiece."

The idea we wish to convey and that we believed would be generally understood was, that there were galenicals that could be depended upon to do certain things, minus great variation in time, as well as to do them accurately; which latter quality also pertains to the precision of the clock, and to date we have no reason for changing our mind.

A. P. REED.

Boston, Mass.

[Doctor Reed is too good a man for us to quarrel with, and, really, we agree with all he has to say about castor-oil. We'll go even further, and admit there are valuable galenical preparations. Our difference with the doctor seems to depend upon the meaning of the word "galenicals," so we will quote the definitions appearing in "Stedman's Medical Dictionary": "1. Herbs and other vegetable drugs, as distinguished from the mineral or chemical remedies. 2. Crude drugs and the tinctures, decoctions and other preparations made from them, as distinguished from the alkaloids and other active princi-

ples. 3. Remedies prepared according to an official formula."—Ed.]

A COUNTRY DOCTOR'S JOY-RIDE

I had the good fortune to be a resident, for some fifteen years, of the town in central Kansas which was the boyhood home of William Allen White. During most of my residence there, the place was the home of the veteran editor Thomas Benton Murdock, uncle of the redheaded ex-Congressman Victor Murdock, who was known locally as "Our Vic." That town, too, was supposed to be the scene which Bill Allen White had in mind when he wrote his story titled "A Certain Rich Man." Indeed, many of the residents, especially the early settlers, claimed ability to identify the different characters in the book; and I, myself, had an intimate acquaintance and friendship with the harnessmaker, still a resident there, from whom, 'tis said, White patterned that character for his story.

The place is an average county-seat town, with more, perhaps, than the average culture and certainly more than the average wealth and "aristocracy." It is surrounded by a good farming and grazing country, and when I first located there the doctor thought nothing of driving fifteen, twenty or thirty miles to visit a patient. The country now is more thickly settled, new towns have been located, other doctors have come, and the drives are less extended.

In the twenty-five years that I have been a physician, I have had many experiences that seemed to me unique and often very interesting; and, in the hope that they may prove at least readable to others, I am going to jot some of them down for their attention.

One cool, clear, starlight Tuesday night in March, just as I was yawning and casting a wistful eye toward the bedroom, the telephone rang and I was called to visit a young lady who lived some seventeen miles in the country to the north-west, and was requested to bring with me Dr. X. The message said that the young lady had been very sick since Sunday with brain trouble; had had two doctors from nearer town, who had failed to relieve her, and they wanted reinforcement.

Accordingly, I hooked Bird to the buggy and, with Dr. X—, a rather diminutive gentleman physically but of normal stature mentally, we started on our seventeen-mile joy-ride, that ended as joy-rides often do. But I must not anticipate. Bird was a large, rawboned, rangy, thoroughbred sorrel mare, of great endurance, capable of jogging off

eight miles an hour without being urged, and ten or better under suasion. It was my custom to let her take her own gait for the first half-dozen miles, till she got her second wind, and then to encourage her to do better the rest of the way. In this way, we arrived at the home of our patient in excellent time, expecting to meet there Dr. Y—, her regular attendant. However, he was not there and, as we declined to see the patient except in consultation with him, a messenger was hurriedly dispatched to his home, eight miles away. (He had no telephone.) Then Dr. X— and I sat down to get a little warmth from the kitchen-stove, the only source of heat. In the adjoining room, we could hear the patient moaning, groaning, gagging, and apparently desperately sick.

After a long and tedious wait, with thoughts of a cozy bed at home tantalizingly before our minds, Dr. Y— arrived. We repaired with him to the sick-room, whereupon I confirmed the diagnosis I had already arrived at in my own mind. I found her pulse and pupils normal, tongue uncoated, breathing regular, lips and cheeks a healthy pink, no exacerbation of temperature, and only a history of three days' pain in the head, nausea, and retching. Dr. X— made a hasty urinary test. This turned out negative.

We now adjourned to the other room, and Drs. X— and Y— began to discuss a line of treatment in the presence of her father, brothers, and another young man, a stranger to me.

"Excuse me, gentlemen," said I, "I should prefer to discuss this case privately," and, turning to the father, I requested that we be shown to a private room. When we were alone, I said to my consultants, who both were my juniors: "I think we had better settle definitely upon the diagnosis before discussing the treatment." Turning to Dr. Y—I said, "What is your diagnosis?" He was taken somewhat aback by my abrupt query, stammered and blushed, then said: "Well, to be honest, I am puzzled. She seems to have some obscure brain trouble that gives her great pain in her head and acts reflexly on her stomach, but what it is I have not been able to answer satisfactorily."

Turning now to Dr. X— I asked him: "And what is your diagnosis, doctor? Do you still think she has kidney trouble?" He replied, "Yes, I do. Of course, the test showed nothing; but, then, we could not make a really thorough test here."

Then I assumed my most judicial air and spoke up: "Well, boys, I shall have to dis-

agree with both of you. There is nothing in her pulse, pupils, tongue; there is absence of fever and other symptoms to substantiate either of your diagnoses."

"Well, then, what is your idea? What is your diagnosis?"

Then I proceeded to explode a bombshell under them by saying: "It is plain to my mind that there isn't a thing the matter with this woman. It is hysterics, pure and simple. She is putting it all on and doing it for a purpose. Who is that young fellow out there with her father and brothers? Is he her sweetheart?" They could not tell, although giving me his name. "Well," said I, "I'll bet a plugged penny against the hole in a doughnut that he is, and, more, they have had a lover's quarrel and she is trying to arouse his sympathy. I have seen this thing too often to be deceived in this case." Then I asked Dr. Y—, "Has he seen her since she took sick?" He replied, "No, I have not permitted anyone outside of her own family to see her."

"Now look here," said I, "you let that fellow see the girl, and I'll guarantee he will do her more good in fifteen minutes than you have done in three days or than we all three can do in three weeks with a houseful of dope. Now let's go home." They readily accepted my diagnosis, and also my remedy. So, after assuring the family that Dr. Y— was doing all for her that any doctor could do, we took our departure.

By this time, the sky had become overcast, the temperature had taken a drop, and a stiff northwest wind was blowing, which fortunately was at our backs. It was just before dawn and intensely dark. We took a different road returning, and, as it was so dark, we could not see the road and had to trust to Bird's instinct to take us home. The sequel showed the mare's instinct better than our wisdom.

For miles we angled across big pastures paralleling the railroad-track, where we could see no road at all. At last we came to a point where the road had been changed since either of us had gone that way, and the wagon-road was made to cross the railroad instead of continuing down the lefthand side of the track. The mare started to cross, and if we had let her alone she would have taken us home all right. But I pulled her back and started her on down parallel with the railroad. But now I found I had a barbed-wire fence on my left. Bird was unwilling to go, soldiering and shying, and at last shied off from a pile of rocks. The wheel struck the

wire with a singing, whirring sound not unlike a rattlesnake's, striking fire with a shower of sparks that frightened the already spirited, nervous mare, caused her to give a lunge that landed the front wheel on top of a fence-post, hung the buggy on the fence, broke her harness, and she galloped away down the railroad while Dr. X— and I lay spilled in a heap on the ground. Fortunately for me, I missed the rocks, and most fortunately for him he fell atop, for my gross weight at that time in ordinary clothes was two hundred and forty pounds.

We were about four miles from home, and, taking our medicine-cases in our hands, we started to finish our joy-ride on foot. At the first cattle-guard, we found poor Bird, humped up and shivering, a great patch of skin torn from her shoulder. I kicked a few boards off the fence and got her through, thus saving us a detour of a couple of miles. Two miles out from town we came to a farmhouse just as the farmer was coming out of the barn with his lantern. We left Bird with him, after dressing her wound, borrowed his horse and buggy and thus saved ourselves the rest of the tramp, reaching home just at daylight. I sent a man after the buggy, rested a few hours, and then was away on a thirty-mile jaunt. But, as Kipling says, "That is another story."

To return to our patient. When Dr. Y— visited the young woman the next day, or rather the same day in the afternoon, he found her "clothed and in her right mind," sitting up and having her hair combed for the first time since the Sunday before.

A few days later, the young man in the case came to town, came to the office and inquired what was the matter with her. We answered him in Yankee fashion by asking, "Why were you there and why are you interested in knowing?"

He said, "We have been keeping company for some time and last Thursday night I had an appointment with her to go to a dance. I was sick and could not go, and I could not get word to her. She went with her brother and sisters, and some of my neighbor girls teased her by telling her I had gone to call on another girl. On Sunday she was at church and I went around to her to explain, but she whirled and left me and would not speak to me. That afternoon she took sick and I did not see her to talk to her until after you doctors left the other morning. Then I told her how it all happened."

There was my diagnosis confirmed, and thus do we see the folly and shortsightedness of

hysterical women who try to make some man "come across" by allowing themselves to let go of their nerve. (By the way, this young lady did not land him.) I have often seen similar cases in my years of practice. I have never seen what I could call hysterics in men, yet, they have them, just as well as do women; and when it comes to pain, men are more babyish than are the women folk.

W. O. BENNETT.

Pittsburg, Kan.

A CASE OF HYSTERIA

In the early years of my professional career, which were spent in a rural district ten miles from the nearest railroad, I had one unique and interesting experience that I am going to relate for the benefit of any colleague who may be subject to occasional spells of "the blues."

It was in the later weeks of a dry autumn that a freshly married farmer of the common, uneducated, very industrious and very unwealthy class appeared, riding a little frisky mule, at my front gate promptly every night at 2 o'clock, lustily yelling, "Hello doc, hello doc," until I acquired the habit of awaking at the hour of 2 every night, with that familiar "hello" in my ears, whether it was called or not. But, as I remember, the fellow called, as I have said, at the same hour night after night for fully two weeks, and always with the same tale of woe of "My wife's suffer'n terribly in that side agin."

Always the same man, the same mule, the same side, the same road—the latter through the woods most of the way and the frost often was glistening in the moonlight upon the very top twigs of the trees. When we arrived, we would find every time the same crowd, this consisting of the wife's father, mother, two sisters, and usually her only brother, all sitting around the open fire or making teas and poultices in the same way. Her complaint was the same every time. This family, by the way, was related to a doctor who lived quite a distance away, and he wanted to shift this practice onto me, as I found out later. And I did not blame him, either. The patient wanted him all the time.

Well, I had given the woman every remedy mentioned in therapeutics, and then some, for this, to me then, very peculiar ailment. I had given her opiates by hypo and by mouth, all the anodynes and sedatives, from acetanilid and bromides to veratrum and lobelia; I had exhausted hydro-, pyro-, and in a small way electrotherapy; in fact, had done every-

thing that I knew. Besides, they had secretly employed an old conjurer, as I afterward learned. But all, all without avail. The "misery" remained "unbearable." At times the woman would have the worst kind of convulsion: head and heels drawing almost together, as they said. In fact, I once saw one of her attacks of spasm, and this, I was told, was "nothing like some that she had had," although it was frightful to me.

There was one peculiarity that I noticed in her convulsions, namely, she was always conscious of what was going on about her. She would watch my every action and expression, but I failed to grasp the full significance of even that, so bewildered had I become in the excitement and anxiety of the whole household. I had reached the limit of my ability, and, upon leaving the place at about daybreak one morning, racking my brain for some rational mode of further procedure, I thought of my old preceptor, who lived about ten miles further in the country. So, I directed my horse thence, in search of light upon this unparalleled case.

Arriving at the village-home of my old friend and teacher, and after a brief general conversation, I arrived at the "magnum opus" of my errand. This my old friend seemed to have surmised, for he was smiling a treacherous way, as was his custom when contemplating some mischievous prank. However, I proceeded to relate the case to him fully and in detail, while he listened attentively, never asking a question. When I had finished with my "terrible" case, the old doctor laughed and laughed until big tears ran down his weather-beaten cheeks. I, on my part, though, failed to see the funny part of so serious a matter and was puzzled. At last he calmed down and seemed to realize my seriousness, but still would burst forth in an explosion of laughter every once in awhile, until I became somewhat nettled and asked him if he had any advice to give me, or not. The truth is, I had reached the point where I did not care much whether he did or didn't; I was growing emphatically indifferent as to his advice in the matter, anyway.

"Well," he said at last, "you have a tough case, my boy; but it is good for you—'twill teach you lots. And right now I'm going to tell you something that you will not want to believe, but it is the only way out for you, and it'll do the work."

Of course, I was all attention, but he kept on spurting out that little laugh every now and then, which at the time seemed to me rather silly. He continued: "I see, I see; yes,

I see. And they want Dr. B, eh? Well, he's their kinsman, is he not?"

"Well, yes," I answered, "but what of it?"

"Oh, yes, yes," he said. "Well, now (affectionately) Lewis, here's the trick. You go back, take with you this—this little vial," and he handed me a dram-vial of fluid extract of valerian. "This valerian, you know, is nothing much but a loud stinker and strong taster. Take this, go directly to those people, tell them you came to see me, and that we decided on this very 'powerful' drug as the last resort for her. Make them think, by every means you can, that it is something extraordinarily dangerous, but impress upon them that we both had decided to give it. Prepare a dose, give it to the woman yourself, and stay attentively by until it works, which will not be long. Then leave them just the least bit of it, with very cautious directions about giving it. Then go home and get the good rest that you need. You'll get it—see?"

Upon this, I started upon my journey back, much wiser already than I had been. Upon reaching the home of my patient, I found the whole crowd assembled there. It was just growing dark, but they were all there preparing for the usual night's ordeal, laying in plenty of firewood, pineknots, and so on, and all were going about with a saddened, almost hopeless expression. I dismounted, went directly into the house, told them at once where I had been, and portentously explained what we finally had decided upon. I took that little vial of valerian very carefully from my pocket, unwrapped it more cautiously, holding it well away from my face, asked for a teaspoon and some water, and enlarged all the time upon the extreme powerfulness of this drug, its great danger if not administered precisely right, and that it was given only in a case of this particular kind.

Now taking the teaspoon, I dropped one drop into the spoon, filled the latter with water, mixed the medicine thoroughly, then poured half of it into the ashes (not into the fire, "for it is explosive"), and directed the woman to take a sip of water first, then swallow the half-drop dose. She and the whole family were watching every procedure with wonder-waiting eyes. I then asked for the smallest vial to be found, and, to my surprise, they found a half-dram vial. This I had them clean—"perfectly," of course—and into it I dropped some of the wonderful (?) remedy. I gave directions to keep it well out of the reach of children, cats, dogs, and chickens; always in a dark, cool place, well away from

fire and where it might not be knocked off, for, as said, it was a "dangerous explosive." That, if they should happen to drop more than one drop, they must empty the spoon, wash it, and try again; and under no circumstances, ever to give more than one-half of a drop, and only three doses daily, and then for only three successive days. They must be very careful not to give one drop more or less, but give only as told, whatever happened, for that was the prescribed course.

Within less than three minutes, the woman spoke to me in a tremulous voice, saying, "Doctor, I feel that medicine plum into the ends of my very toes." And she did, no doubt, for it relieved her as completely as anything I ever saw act in my life. And, best of all, I never had to make another night ride to that home after that little precious dram-vial of fluidextractum valerianæ found its way into my armamentarium. And you can bet that I've kept that wonder-worker in my case ever since for just such cases as this one.

LEWIS W. SPRADLING.

Athens, Tenn.

[Read the preceding article on hysteria—then read this one. Hysteria is a disease-animal of variegated hue, changing its colors to fool the too-trusting and ever-sympathetic doctor. It fooled me once—and I never think of that case without a quiet chuckle.—Ed.]

PROPHYLACTICS VERSUS THERAPEUTICS

Herbert Spencer, justly termed "the world's first really great systematic thinker," uttered a wise maxim when he said: "People never try the right way to right a wrong, until they have tried the wrong way." Many try every imaginable wrong way, and then die without having found the right way. Very much, of course, depends on the stage at which they have arrived in their mental evolution. But it is a wise provision of nature that it is only through many trials resulting in failures, so called, as well as successes that we finally succeed in attaining to the stature of the perfect man. Every failure, then, is a success, when viewed from the standpoint of the philosophy of evolution. In the last analysis, there are no failures. Every time we fall down we fall up.

But what has this to do with my subject? Much, very much, as we shall see. As man does not live by bread alone, so he should not

live for money alone. If he tries to, he soon finds that the love of it is "the root of all evil," or "a root of many evils," as the revised version of the Bible has it. In other words, there is a right way, as well as a wrong way, to live, and the more completely we live in harmony with nature's all-wise laws, the greater will be our satisfaction, and the more rapid our progress through the eternities. The greater also will be our reward. It seems to me that the doctor, above all others, should not only profit by a knowledge of such truths as these, but through the relation he occupies toward society, the obligation resting on him is correspondingly great to pass them on to his clientele.

In my practice, I have time and again been astonished to find that few, if any, instructions were given by my fellow practitioners to their patients concerning the avoidance of the most common causes of disease. It is well known to all who are broadly educated that fully nine-tenths of the diseases that flesh is said to be heir to are due to causes that are easily avoidable.

If doctors know this, why do they not tell their patients how to live right physiologically and thus avoid the inevitable results of the violation of nature's laws? Is not "an ounce of prevention better than a pound of cure"? People do not want to get sick. Disease is like war. Few, except the munitions manufacturers and ambitious war lords, want war. But we have it periodically, because we ignorantly take the road that leads to it. I think doctors above all others should live above the mercenary plane.

Doctors should be teachers as well as dispensers of pills and powders. Prophylactics should displace therapeutics as rapidly as possible. It is far better, safer, more economical, and immeasurably wiser to keep well than to go on blindly, get sick, suffer, be a burden and an expense to relatives or society and often die prematurely.

To illustrate: Before me lies a treatise on gout and rheumatism. The author says: "The most eminent authorities of the day concur with Alexander Haig in the opinion that the acting cause of these affections is an excess of urates in the economy." Very true. I found this out years ago, since which time I have avoided the causes that produce this "excess of urates," and, consequently, have no more rheumatism. Every patient whom I can get to follow my instructions, as to diet especially, enjoys perfect immunity from this dread disease. Physical ailments do not

come on us through a "mysterious dispensation of providence," as once was thought. It therefore gives me far greater satisfaction to tell people how to keep well and enjoy the life that nature intended for us than to prescribe the ordinary remedies and allow them to go on in their ignorance unwarned.

In China, it is said, the doctor is paid to instruct the people as to right living and to try to keep them well. But, then, they are "heathen," and don't know any better; and we are such a wise "Christian nation," you know. It is to the doctor's economic and financial interest here to keep the dear people in ignorance of these matters. How badly we need missionaries from the Orient! What will posterity think of us as it learns these facts? Till then, the people of our country must pay out three billion dollars a year and more, in an effort to get cured, and almost nothing to prevent disease.

Dr. G. M. Gould, a good authority, says that fully one-third of this could be easily prevented. How shortsighted, how unreasonable to continue to treat effects rather than causes. With a sane economic organization of society, protecting everyone in his right to work and to the full product of his effort, securing good and equal educational opportunities to all alike, fully nine-tenths of our diseases and most of our crimes and other abnormal conditions could be prevented. Then life would be worth living to all. Suicides, homicides, insanity, idiocy, our barbarous penal system, war, and other relics of savagery would vanish like mists before the rising sun.

Our educational system should include the whole body—physical culture—as well as the mind. It should aim at training for complete living. Eugenics should be taught in all our high schools and colleges. What a crime it is to train our young men in cadet clubs for war instead of peace. All alike should be trained as home-builders, home-protectors, and home-conservers. A nation of home-owners is invincible, but a homeless nation is ready for anarchy.

We must close with one more quotation from the world's greatest synthetic philosopher, Herbert Spencer. He says ("Data of Ethics," p. 83):

"For the production of the highest type of man can go on only *pari passu* with the production of the highest type of society—complete life in a complete society is but another name for complete equilibrium between the coordinated activities of each social unit and those of the aggregate of units."

Such a state of society is exactly what Socialism proposes. Had this condition existed in Europe, there would have been no war over there now. But the people evidently are not yet ready for it. May heaven hasten the day when our noble profession will respond to the call, already coming from millions of sad hearts, to teach the people how to avoid the causes that logically produce the direful results of which we all are so painfully cognizant.

S. J. BROWNSON.

Fort Worth, Texas.

IS THIS A MEDICINAL CURE FOR CANCER?

Among the ancients, there were certain swift runners whose mission it was to take a lighted torch and, speeding with windlike momentum, light up a signal-fire at a given elevated spot; then another runner would grasp the torch and speed on, and do like the one before him. And so on and on, from hilltop to hilltop. By this means was intelligence of a certain kind conveyed to the populace. It is my desire to place in the hand of some swift runner a lighted torch by means of which valuable intelligence may be disseminated among us of the medical craft.

Cancer has baffled treatment for so long that the watchers have grown weary looking for a cure or a therapeutic modification of this disease. What I have to say upon this subject is the result of my personal observation during many years.

A woman about 50 years of age abruptly entered my office one summer-day and, seating herself on the side of my operating-chair and throwing back the front of her dress, asked in broken English, "What is this? All the doctors in the town (and here she named all of them) say it is cancer."

The breast, I found, was enormous in size, more than four times normal. The nipple was entirely retracted and completely surrounded by wartlike growths. The axillary glands were greatly swollen, and knobby and knotty to the feel. Below the nipple about two inches there was an open sore, large enough to hide a hen's egg, and from this there was oozing a slimy discharge. The blood-vessels on the side and around the breast were like the snakey locks of a Medusa head.

I filled that sore with acetanilid (in impalpable powder), and then gave her enough for many dressings. I also gave her in one

vial 5 drops of mother tincture of *phytolacca*, and in another vial I gave her 5 drops of mother tincture of *pulsatilla* (both of Boericke & Tafel make). I then directed her to put the contents of each bottle in a separate glassful of water. One vial I marked No. 1, this to be taken before meals. The other, marked No. 2, she was to take after meals. The dose of each one teaspoonful scooped out of the respective tumbler. This prescription was repeated from time to time as the medicines were used up. This woman was still living and in fair health fifteen years later.

Some time following the first coming of the preceding patient, another German woman came to me and said, "I know what you have done for her"—naming the patient above referred to. "I want you to look at my breast. I can't wash, because the washboard hurts me; I can't go to church, for my corset hurts me. I feel a hard lump in the breast; there are enlarged axillary glands; I feel sharp, needlelike pains."

I gave her the same remedies mentioned above. After a few months, this woman ceased to come, and I lost track of her. However, the following season she and her daughter came to me and said: "Doctor, I have come for more medicine. My breast got so much better that I thought it would all go away and I should not need to be at so much expense." (I had charged her for the prescription fifty cents.) "But my cousin was here. He is, as you know, a great surgeon in California. He went home today after visiting here for several weeks. He was angry that I did not tell him before, for he would have cut it out and not charged me a cent. His railroad-tickets were stamped, so, he went away today. But he told my husband that he should take me to Chicago and have that lump cut out at once, for it was a bad cancer and would kill me. Then, just as soon as he was gone, I came to you. You helped me before, and I think you can again."

Then the daughter spoke up and said: "I will see that mother takes the medicine just as you direct. No matter how long it takes or what it costs."

I found the breast very sore and tender to the touch, with sharp pains. The glands were enlarged. In fact, it was a typical case. I repeated the prescription, and in two years it had removed all appreciable lesions and the patient was free from pain and discomfort. Twelve years later, this woman was taken ill away from home. The trouble was of an

intestinal nature. Upon her return, she was emaciated and suffered great pain. When I looked over her case, I thought it might possibly be a metastasis to the peritoneum or glands of the bowels, or that perchance her former trouble had not been entirely eradicated.

Acting on this supposition, I gave her, as soon as the conditions permitted, the *phytolacca* and *pulsatilla* prescriptions, and she gradually returned to her usual health.

Ten years later, I was called to the same patient, she then suffering from violent sciatica, as a complication of intestinal and other disorders. She confessed to me later, when the case assumed very grave aspects, that the old breast trouble had bothered her more or less for a year, but she had said nothing about it, as she did not wish to be complaining all the time. I told her that we had lost a whole year which we might never recover. As I was then taken sick myself, I could not treat her, and they changed doctors several times; one of whom, an Osteopath, she said, nearly killed her. Later, she was taken to Ann Arbor, when a rapidly growing uterine cancer was found, and of this she soon died.

A woman so wan and weak that she could hardly stand alone came slowly up the walk to my office-door, leaning on her sister's arm. She was in the last stages of cancer of the breast. Several of her relatives had died of cancer. She said to me: "We have seen the women you have helped, and I hope you can help me, too; however, I will not consent to an operation or the use of plasters." It seemed as though two or three weeks at most would wind up her earthly career, even under the very slow progress of cancer. I gave her the usual remedies and sent her away—but not at all rejoicing.

However, the woman refused to die; in fact, she began to mend, and she kept on improving. Now let me say that she was a woman of sixty-five years, was almost a hunchback (from a badly contorted spine), a great eater, and subject to many ailments—so, you can see what the prospects were. For all that, she slowly but surely mended, and in three months was able to walk out alone on the street; the glandular enlargements under the arm had vanished, and only the large lump persisted.

Now outside hindrances began to interfere; a bowel trouble was brought on by excessive feasting, and later she contracted bronchopneumonia from exposure. These made the use of my treatment impossible. So, after

many weeks, we had lost ground because of these conditions.

One day she was taking a bath, her husband assisting. He was an excellent nurse and a strong man, but subject to neuralgic attacks. Just as he was lifting her out of the tub, he was taken with a crick in his back, causing him to drop his wife and falling on top of her. Her cancerous breast caught on the edge of the bathtub under the weight, momentum and impact of the cruel blow. I was summoned, and I begged to be allowed to amputate at once. But, no. Two things had been at work—her fear of the knife, and the tongue of a meddling neighbor. The latter had told her of many wonderful cures made by the balmy oils of Doctor Blye, of Indianapolis. Consequently, I was dismissed. Not long afterward, the vital statistics reported one more death from cancer.

One more case and I am done.

Visiting one day at the home of a minister of the gospel, I was asked by his wife to come into the next room. This I did, and then immediately was asked to come into the following room. I noticed that, as I passed through a door, it was securely locked behind. This was repeated no less than four times, when at last we arrived in a bedroom in the rear of the house, with curtain tightly drawn.

This last door being also locked, the lady turned to me and said: "Doctor, what I am about to say to you I do not wish either my husband or my sons to know. Several years ago, my sister died of a cancer of the breast. It was my duty to care for her, and the memory of those fearful days and nights of suffering are with me yet like a frightful nightmare. For several months now, I find that I am following in my sister's footsteps. Look at this."

The lady uncovered her breast, and I beheld a cancer. Then, passing my hand under her arm, I felt the telltale enlargements. She said: "Neither my husband nor my sons know anything of this. If you can do nothing for me, say nothing about it. Only at the very last will I tell them."

It is said, there is no love like a woman's. Can you equal this example of love and heroism?

I gave the usual treatment, and at the end of the year she came joyfully to me and said, "It is all gone, the cancer." That was many years ago, and she is yet alive.

Now ye fast runners, here is the torch, hold it high, carry it far. I know not the medicinal action of these remedies, when

given in such dilution as to be able to feed the hungry cells, as milk feeds babies.

I am an old man—yours is the work.

C. S. COPE.

Detroit, Mich.

[I had the pleasure of meeting Doctor Cope at the meeting of the American Medical Association, in Detroit, last month, and I am more than ever convinced of his ability and sincerity. I have known him by correspondence for years, and respect his character and brain. If it were not for these facts I should hesitate to publish this article—for cancer is not a disease which permits of delays or of experiments. As a rule, the hope—and usually the only hope—lies in immediate surgical intervention. I wish to emphasize this, for it is possible that some few of our readers may be tempted to temporize, and to pin their faith to drugs at a time when the use of the knife is imperative.

I have given you the warning, but not for the purpose of discouraging the use of the remedies suggested by Doctor Cope. I hope they will be tried, and thoroughly, by many men, but without neglect of any indicated procedure, surgical or otherwise. Personally, of course, my leaning is toward the active principles, and I should use anemonin instead of pulsatilla, and a good concentration of the phytolacca. That, however, is a matter for everyone to decide for himself. If any of our readers give these remedies a trial I hope they will tell us what results they obtain.—ED.]

UNLICENSED MIDWIVES

In the March issue of *CLINICAL MEDICINE*, page 272, I notice an article entitled, "Keep Friends With the Midwife." Now, that is exactly the proper thing to do, and the thing I always have done and always shall do, providing that these midwives are licensed. If they are not licensed by the state, then they have no more right to practice midwifery than I should have to practice medicine without a license.

Recently I made inquiry of our board of health, relative to certain women who were doing quite a business as midwives, at \$5.00 per case. The board informed me that the parties I referred to had no license and were practicing midwifery in violation of law. Yet, everybody for miles around supposed that these women did have state licenses.

Better investigate a little; maybe there are unlicensed women doing work that you your-

self should be doing. I asked several of my brother physicians whether such and such a woman had a license to practice midwifery, and they answered, "Yes, sure she has; she's been attending women for years." As a result of my investigation and further action, a warning-letter was sent by the board to the parties in question, and they have now quit practicing midwifery. The law is weak in the provision that anyone of the family may report births in case no physician is called. Unlicensed people should not be allowed to do that.

"KIRK."

—, Illinois.

A CASE OF BLACKWATER-FEVER IN THE JUNGLE

The towns of Tela and La Ceiba are hotbeds for hematuria, or hemoglobinuria, a disease of malarial origin. It is the cause of death of most of the white men that die in these regions.

Two months ago, I was in Tela, to where I went to visit my wife's grave. A young fellow, an electrician, asked permission to accompany me up to this country, of which he had heard so much, and I felt no inconvenience in taking him along. Waiting for a Carib craft to take us up the coast, we lost several days in Truxilla, and when we arrived at Brewer's Lagoon my friend complained of being sick. He confessed that he had felt indisposed for several weeks, but that the doctors had taken scant notice of his condition. I soon was able to diagnose his disease as hemoglobinuria—and I had a pretty hard case on hand, at that.

Fever was intermittent, but without the usual chill. I loaded the man in an open boat and kept right on up the Patuco River, as I wanted to get him away from the mosquitos of the swamps. Our food consisted in whatever I could get; sometimes, when passing an Indian village, it might be eggs and chickens, sometimes an iguana, or a deer or a pheasant. The sick man learned to suck raw eggs, of which during his ensuing convalescence he devoured a great lot.

My medication consisted in calomel, in broken doses, and bilein, followed by epsom salt. Quinine I gave in rather stiff doses—1-2 Gram once a day. I also gave copper sulphocarbonate, 1 grain divided into four doses, during the day. In addition, arbutin and lithium benzoate, 1 grain of each every two hours; arsenite of strychnine, 2 milli-

grams; the Abbott anemia and chlorosis granule, four times a day.

It rained almost every day, and when I arrived above the mosquito line I pitched camp on a small island having an extended sandy beach.

My friend grew very weak, but, after fifteen days, we were able to start on our return trip down the river, and, with the above as the only treatment, my patient made—well, I won't say an altogether "uneventful" recovery, for, he had several relapses; still, he got over it in the end. I kept him, though, for a long time on the following solution of epsom salt: 2 ounces of magnesium sulphate and 6 grains of copper phenolsulphonate dissolved in 10 ounces of water. Of this, he took a spoonful three times a day.

Several times I allowed him to drink coconut-water (the so-called milk), for its diuretic effect; but I soon discovered that it brought on a recrudescence of the symptoms, so, I stopped it.

A. R. HOLLMAN.

Brewer's Lagoon, Guatemala.

OBSTETRICAL FORCEPS

In regard to Doctor Ewing's suggestions for an obstetric forceps, printed in *MAY CLINICAL MEDICINE* (p. 445), I desire to offer my own idea of axis-traction. I hold that traction should be made in a line perpendicular from the point of resistance; in other words, the traction-force should be in a direct line from the point of resistance. For many reasons, but especially in order to preserve the sense of feel or touch, the axis-traction addition to the forceps should be as light as possible.

In my opinion, the Tarnier axis-traction forceps is too clumsy and has too much mechanism connecting the traction-force with the point of resistance; and this same objection applies to the forceps illustrated on page 445 of the article. The one shown on page 446 (No. 3), it seems to me, would not do at all, because the traction-force would pull "against the grain," as it were, that is, against the curve, and would not give the direct action of the humble little axis-traction hooks, in which the sense of feel and touch is maintained so well.

I have made an improvement, I think, on my axis-traction rods. When I bought them, the hook that went on the forceps was shaped with the point running straight in at right angle. This occasionally scratched or cut the baby's scalp, also it would slip off the

forceps too easily. So, I had the point turned downward at about 45 degrees, so that it fits against the shank of the forceps.

Another advantage in having the point turned downward is, that sometimes it is difficult to slip the hooks on the forceps after the latter are introduced rather high up, so that, if the tissues are swollen it may occasionally require two or three attempts to attach them. It saves time and unnecessary manipulation of the parts—always very important—that the hooks which I have can be placed on the blade of the forceps before it is introduced, placing the length of the hook along and against the forceps, holding both together lightly with the hand.

The hooks and handle which I bought were only long enough for my short forceps; so, I had a pair of hooks made with longer legs for my long forceps, and I like them very much.

C. W. HUNT.

Brevard, N. C.

[In the years gone by, when the present writer did much obstetric work, he had a pair of axis-traction rods, having bent hooks as they are described by Doctor Hunt, and no good reason appears to exist why these hooks should not always be bent in that manner. For practical purposes, however, the axis-traction rods were always left very carefully in the satchel; for, this writer found it quite feasible to do something like Pajot's maneuver as described by DeLee ("Principles and Practice of Obstetrics," 1913, pp. 982 and 984), except that the index- and the second-finger of the right hand made pressure downward on the forceps higher up than the lock. The sense of feel or touch, insisted upon with so much justice by Doctor Hunt, is a very important guide in the application of axis-traction, whether it be done with or without special appliances. It must be acquired and developed with great care by every obstetrician.—Ed.]

ACTION OF SUGAR AS A WOUND ANTISEPTIC

The destructive action of sugar upon anaerobic bacteria in wounds does not rest upon osmotic processes or the production of fermentation-acids, but, rather, K. Spiro asserts (*Muench. Med. Woch.*, 1915, p. 497), the sugar gives rise to a different bacterial flora, which tends to displace with a harmless one the malefic pathogenic ones.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

A LITTLE philosophy these hot days possibly may be quite as acceptable as a dissertation on some disease that wouldn't interest anyone but a doctor. What I am about to write may interest your patient even more than it will you. Let your patients read what I shall write for this issue and see how they like it.

Not infrequently in my "health-talks" to my patients at Mudlavia I talk along these lines, and it always makes a hit.

Assurance bordering on impudence seems to be the leading trait of many successful men. The time seems to have passed when the average man can succeed by modest and unassuming methods. All the nice things that have been said in favor of modesty fail to stand the test when brought into the pull and haul of everyday life. There will be found now and then a modest but an intensely earnest man who makes a great success in life; but such men are the exception.

If you are going to make yourself known, it is no longer the thing to pass out a card quietly. You must advance with a trumpet and blow a brazen blast loud enough to shake the stars. To stand with lifted hat and solicit a hearing, saviors of mendicandy and a humble spirit.

Bold assurance, while it disgusts some of us, will win nine times out of ten. The modest and diffident man may starve in a garret. There is but little chance for him in these strenuous days of the world's existence.

There seems to be nothing else nowadays so conducive to success as "cheek"; and the more cheekiness, the better. Modesty may be a good and a beautiful thing; but experience seems to prove that, if we wait for our turn in this world, our turn never will come.

But, oh! that we might pass out of this age of sordid, self-seeking, and impudent assertiveness into something larger, and sweeter, and finer!

Give us less yeast in our bread, and more substance; fill our cups with wine rather than froth; and, for sweet pity's sake, hang up the trombone and the bass-drum, and let

"silence, like a poultice, come to heal the blows of sound."

The food-question is as vital as the whisky-question. It begins with the first day of our life and links itself with the welfare of every human being every day of his life. The wise solution of the food-question will contribute immensely toward man's health and happiness. Thousands of people suffer from starvation.

Many people nowadays are trying to live on vegetables alone or on "prepared" foods. People who limit their food to such stuff gradually starve to death. These things furnish food for fat and fuel for the lungs; but they fail to feed the brain, nerves, bones, and muscles, and, so, these important parts starve. And not only does the brain become uncertain in its action, but headache and neuralgia are common, the muscles become thin and weak, and, back of all this, the blood becomes so imperfect and poor that anemia and other taints are developed. Man should eat both vegetables and meat—but not too much at a time.

Give your stomach exercise. It will become lazy and weak if you live on "predigested" or "prepared" foods exclusively.

Praising others for what you would like to have praised in yourself is the very sublimity of blowing your own horn. Praise between man and man is so rare that we neither know how to bestow it nor how to receive it. The husbands who never have a word of praise for their wives, the wives who never have a thought of praising their husbands, and the parents who only find fault with their children are, I fear, in the majority.

Praise, but don't flatter. The difference between praise and flattery is as wide as that between praise and blame. The flatterer always is a scoundrel, and the glad receiver of his flattering falsehoods always is a fool. Praise is a legitimate tribute to worth and worthy doing; and, when a man does well, tell him of it. Do not wait until a man is dead before speaking of his good traits. Let us have a little more "taffy" before death

takes us, and less "epitaphy" afterward. It always is safe to praise a man who really deserves praise; and, moreover, it will do you yourself good to praise somebody else.

The man who utters honest praise is noble, and his friends soon recognize it. The man who receives honest praise does so without feeling humiliation, and is made strong by it.

If you wish to be recognized and appreciated for certain traits or good works done, praise those things in others. We people of this world lean on each other. We need encouragement with every step.

We need to give praise to those who deserve it, that we may keep ourselves unselfish and root out from ourselves all niggardliness.

Nature cannot be outraged with impunity. Although a generous giver, she is a hard bargainer; and invariably, in the long run, the man who works too hard, who crowds the work of forty years into twenty and burns the candle at both ends will find that he accomplishes less by attempting to overmatch or cheat her than by accepting her own terms. The mind is monarch of the body; but, if it ever so far forgets itself as to trample upon its slave the slave will rise and smite its oppressor.

In all likelihood, the man who toils and moils at business, without relaxation or enjoyment, through the best years of life, with the hope of retiring at last and making the evening of life all holiday will never retire, except into an untimely grave.

The proper remedy for a period of unhealthy living is not, to work double tides, not an hour or two occupied in drawing off the remaining strength of an overtaxed system but now and then an entire day or week or month given to relaxation and renovation and to mere physical improvement.

Vacations and frequent holidays, though but for a day, are the true safety valves of professional and business men; and he who grants himself occasional rest not only will live longer, but will do more work than he who drudges from January to the last day of December.

Adversity has the same effect on a fool that a hornet has on a mule. It sets him to kicking back. If you are made of the right stuff, you will encounter the troubles and trials of life unflinchingly and uncomplainingly.

Adversity often is a blessing in disguise. The school of adversity graduates the ablest pupils; and the hill of difficulty is the best

of all "constitutionals" for the strengthening of mental backbone.

If you refrain from "kicking" when trouble comes to you, it is an evidence that you have the right stuff in your makeup. You need trials to develop your character. Great men can no more be made without their encountering trials than bricks can be made without fire. The furnace of adversity often purifies a man and separates the good metal of his nature from the dross by which it was obscured.

Do not "kick" back or even sit down and cry over these poor old "might have beens." Just accept what comes to you, and do your best, content to know that by and by will surely bring vacation-time, the unending holidays and eternal home.

Remember how many otherwise sweet natures lie all about you, spoiled by prosperity, like overripe apples in the sun.

Life all sunshine without shade, all happiness without sorrow, all pleasure without pain were not life at all and not worth living.

Be patient. That attitude of mind is the only remedy against the ills of life.

Eat to live, instead of living to eat. If there is any possible exception to this rule, as applied to human strength and development, it is with the young and growing child. However, surfeiting, even with proper food, is never advisable during any stage of life.

Old people, after the activities of life in a measure have passed by, should practice especial care in relation to food, air, and exercise. The latter should be performed out of choice, and because of the pleasant associations attending employment practicable in moderation and for the love of it.

Proper and needful exercise stimulates appetite and digestion, and it enables the aged person to eat to live, in lieu of living to eat, or of going through the ceremony of taking food at regular intervals, regardless of the demands of the system. Only very little food, even if of proper quality, can be digested and assimilated by the aged, unless continuous physical activity is kept up.

An excellent rule for people of advanced life is, first, never to take food unless appetite demands it; and, second, never to continue to eat until appetite is satisfied completely.

While this rule is good for all, it is especially desirable for those who have passed the middle mile-post of life, and its observance will prevent sluggishness of the liver and con-

sequent hypochondria, thus enhancing greatly the enjoyment of life.

The observance of proper hygiene is of special importance to those in the evening of life, to the end that their last days may be spent in peace and comfort.

—
You must love your work, and not always be looking over the edge of it, wanting your play to begin. Put heart into your work, and do not look on it simply as a means of earning money. If you were in perfectly normal condition, you would find your greatest joy, as well as your highest ideal, in achievement.

These are conditions which an ordinary man who finds in his vocation only a mere interest to earn his bread and butter never knows. The majority of people are satisfied to do only that which they are obliged to do. They do not care to undertake more than conditions demand. They are always wishing that their circumstances were different, always bemoaning their hard luck in not having been born under a lucky star, or wailing because they have not been assigned to a less arduous task.

How few people ever enjoy the experience of doing a disagreeable task thoroughly or delight in the results of such labor! Many work in the fog and under clouds, rarely seeing the beauties of the sunlight about them. No one is normal who does not positively enjoy working, who does not feel that it is healthful exercise for mind, body, and soul.

Yet, men seldom are satisfied, constantly spurring themselves to do more, until their recuperative power is so exhausted that nothing is done as well as it might be if they took time to rest and renew their powers. All of their vigor is wasted in the very excess of ambitious stimulus, and they finally break down from overwork and from robbing themselves of sleep, nourishing food, and healthful exercise.

You must learn how to utilize to the best possible advantage all the physical and brain-force generated. Most people waste a large part of their powers—squander their brain- and nerve-force in a way which they would utterly condemn if, instead, they had wasted money.

—
Keep your teeth clean, and they won't decay. How shall they be kept clean? With a toothbrush, of course, says someone.

Yes, a toothbrush is a good thing, but one good toothpick is worth an armful of tooth brushes. The toothbrush does well in keeping the flat side of the teeth clean. But on those

flat surfaces the food does not stick, and, so, there is little tendency to decay.

The mouth is a warm place—nearly a hundred degrees by the thermometer. If we eat meat today for dinner, the little pieces which find their way between our teeth will be exposed to the heat of the mouth and begin to decompose before tomorrow noon. If these particles of food are left between our teeth and allowed to decompose, ought we to be surprised that the teeth and gums suffer? A toothbrush will not go between the teeth and remove those bits of food.

On rising from the table, use a goose-quill toothpick thoroughly, then rinse the mouth, so as to remove such particles as the toothpick may have left behind.

Before retiring at night, use a toothbrush and a good tooth powder. Do the same thing on rising in the morning.

Consult your dentist frequently, that your teeth may be kept in good condition.

—
“A laugh is worth a hundred groans in any market.” Laughter is undoubtedly one of nature's greatest tonics. It brings the disordered faculties into harmony, it lubricates the mental bearings and prevents the friction which monotonous exacting business engenders. It is a divine gift bestowed upon us as a life preserver, a health promoter, a joy-generator, a successmaker. Life, with the average man, is too serious, at best. Never lose an opportunity for relaxation from the stress and strain of your business or profession.

Every draught of laughter, like an air cushion, eases you over the jolts and the hard places on life's highway. It tends to bring every abnormal condition back to the normal. It is a panacea for heartaches, for life's bruises. It is a life prolonger. “Laughter is a positive sweetener of life; but, like good coffee, it must be well cleared of the grounds of ill will. There is nothing on earth more delightful to listen to than witty laughter, and nothing more tormenting than the silly and causeless cachination of fools. Between a laugh and a giggle, is the width of the horizon.”

Commend me to a good laugh—not that little snickering laugh, but a real laugh that will sound clear and round all over the house.

The first duty we owe a child is, to teach it to fling out its inborn gladness and joy with the same freedom and abandon as does the bobolink when it makes the meadow joyous with its song.

Learn to laugh, and to laugh aloud, with unrestraint.

Among the Books

TAYLOR: "CANCER"

Cancer: Its Study and Prevention. By Howard Canning Taylor, M. D. Philadelphia and New York: Lea & Febiger. 1915. Price \$2.50.

Doctor Taylor, in his preface, very pertinently reminds the reader that there are two phases of the treatment of the cancer-problem; one, the acquisition of more information regarding the disease; the other, the analysis and utilization of the data now in our possession. The former division of the subject is the task of the investigator and research-worker; the latter belongs to the clinician, aided by the patient.

Doctor Taylor thinks that neither the opportunity nor the obligation of the clinician to contribute to the general knowledge of cancer is grasped as clearly or is met as assiduously as they ought to be. He holds it to be the plain duty of all practitioners to preserve more accurate records of patients afflicted with cancer and to submit them to the clearing-house of general scrutiny. Moreover, while he is thus collecting data, it is equally, and perhaps even more emphatically, the duty of the physician to utilize to the best purpose the data already available.

The purpose of the present book is, to put together these facts and data and place them within the reach of the profession and of all others who may be interested in this gigantic, and heart-rending problem. The author's wide experience, as gynecologist to the Roosevelt Hospital at New York and as professor of the subject in Columbia University, enables him to speak with considerable authority and to support his statements with ample evidence.

FISHBERG: "PULMONARY TUBERCULOSIS"

Pulmonary Tuberculosis. By Maurice Fishberg, M. D. Philadelphia: Lea & Febiger. 1916. Price \$5.00.

The necessity of detailed special treatises on consumption, this widely prevalent disease, with its diversified and protean manifestations, becomes evident, among many

other things, from the apparently paradoxical clinical truth that *incipient* does not always mean *curable* tuberculosis, and, conversely, that *advanced* disease does not necessarily indicate a hopeless outlook. The reasons for this contrariness of tuberculous disease require careful study.

The author has based his views on the drug-treatment upon his experiences in New York. We have knowledge of a great many things, not mentioned in this book, which are of decided value at some time or other in the course of this disease. Also, the reviewer cannot agree with Doctor Fishberg in his rather dubious endorsement of specific treatment, being convinced that this is of far greater importance in the treatment of selected cases of the disease than the author is inclined to concede. Very naturally, much depends upon the kind of "tuberculin" that is employed. When once a proper "antigen" will be available and when practitioners will be fully trained in its use and in the immunology of tuberculosis, we venture to predict that the morbidity and mortality of pulmonary tuberculosis will both diminish; more particularly after the idea of prophylactic immunization has found acceptance and has been put into practice.

CARLSON: "OBSTETRIC QUIZ FOR NURSES"

The Obstetrical Quiz for Nurses: A Monograph on Obstetrics for the Graduate and the Undergraduate Nurse in the Lying-in Room. By Hilda Elizabeth Carlson. New York: The Rebman Company. 1915. Price \$1.50.

The author has attempted in this volume—somewhat extravagantly called a monograph—to arrange the salient facts that should be known to obstetrical nurses. As a whole, the task has been well performed and the information is given in simple and concise words. When, however, the author answers her question "What is jaundice?" by saying that it is "a yellow discoloration of the skin," we must differ with her most emphatically. It is to be hoped that this and other inaccuracies will be remedied in a subsequent edition of this, otherwise quite useful reminder

for nurses; also that it may not be made to replace textbooks, but be used to serve only as a means for rapid reference and to refresh the memory.

COOLIDGE: "DISEASES OF NOSE AND THROAT"

Diseases of the Nose and Throat. By Algernon Coolidge, A. B., M. D. Illustrated. Philadelphia: The W. B. Saunders Company. 1915. Price \$1.50.

While this little volume does not lay claim to present a complete treatise on the diseases dealt with and only promises to afford a guide for their study, the descriptions of diseases are very full and sufficient for the purposes of the general practitioner. To cite one instance, that of a "cold" is quite complete in its graphic details. It is in accordance with the nature of things that the treatment is usually mechanical—surgical. While drug-treatment, more particularly biologic treatment, is not neglected, it might have received a little more consideration, as it is, undoubtedly, effective in many instances.

"MEDICAL CLINICS OF CHICAGO"

The Medical Clinics of Chicago. Published by The W. B. Saunders Company, of Philadelphia. Price per year (6 numbers), paper, \$8.00; cloth, \$12.00. Vol. I, November (No. 3), 1915; and January, March, May, 1916.

The reviewer desires to emphasize the great practical value of publications of "clinics," that is, of lectures delivered before a class of students or physicians and illustrated by cases in point that are demonstrated to them and which they have an opportunity to examine. For the reader of such "clinics," it is hardly necessary to have the patient before him in order to benefit from the lectures; for, these are usually so clear and graphic that the practitioner will recall cases of his own falling within the description by which they may often be elucidated.

We believe that this form of publication has contributed in making the works of Trousseau, of Charcot, and of other great clinicians imperishable. It brings the salient points of clinical problems before the mind's eye far better than do the descriptions (so often dry-as-dust) found in textbooks; it makes us see concrete cases of disease, with their diversity and multiplicity of symptoms, and arranges them before us in an orderly manner for our guidance in examination and

study. In short, the clinical lectures tell us all the material points of a given disease—complex in such a manner that we may retain them and make them useful for practical everyday work.

On the other hand, textbooks present cold, lifeless dissertations on diseases in which the personal element is entirely wanting. Often it is impossible for the tired physician to engender sufficient enthusiasm to work his way through pages of text in order to establish the point that he is trying to find.

Textbooks are excellent for the student to obtain information upon diseases in general and in particular; they are of service to the physician to refresh his memory, as when he wishes to establish the differential diagnosis of a particular case of disease or to look up the etiology, symptomatology, treatment, and so on; and, finally, to round out and complete the information gained in actual clinics or in published clinical lectures.

For a live, interesting, and informing discussion of actual cases, clinical lectures by men who deserve to stand high in the medical profession are far superior to the usual publications, in their immediate, personal appeal. The "Medical Clinics of Chicago" form a good specimen of this class of medical literature. Reproducing the clinical lectures of some of our most noted clinicians, they present a wealth of information that makes them highly useful. To enumerate all the good things in the four numbers before us would mean to give a complete list of the contents; and that hardly seems necessary. Physicians will find a subscription for the "Clinics" an excellent investment.

GOULD: "MEDICAL DICTIONARY"

The Practitioner's Medical Dictionary. By George M. Gould, A. M., M. D. Third edition, revised and enlarged by R. J. E. Scott, M. A., M. D. Philadelphia: P. Blakiston's Son & Co. 1916. Price \$2.75.

This new edition of Gould's medical dictionary has been enlarged by the addition of some 20,000 new terms which have come into use since the publication of the last edition. It is a handy volume, containing definitions of over 70,000 medical terms. The type is clear, although rather small, at least for the eyes of the reviewer.

At the time of its publication a dictionary can only be announced; it can hardly be accorded a critical review until after close and frequent consultation for, say, six months or more. Those terms and definitions which

have been looked up are well given and explained. At all events, "Gould" has always been a great favorite among practitioners, as certainly it has deserved to be—not the least of its features having been the aim at linguistic purity and etymologic accuracy, not to mention the excellent illustrations and many useful tables. As to the present edition, the change, from the former ponderous and costly 2-volume style, to the present popular-priced edition, is worthy of especial note.

TRUDEAU: "AUTOBIOGRAPHY"

An Autobiography. By Edward L. Trudeau, M. D. Illustrated. Philadelphia: Lea & Febiger. 1916. Price \$2.00.

The history of the antituberculosis crusade in the United States is typified in the history of Doctor Trudeau. Beginning in a small way, tentatively, intuitively, in fact; then, with gained experience and under the stimulation of Brehmer's work, more courageously, but always empirically, his work progressed steadily, utilizing the acquirements of scientific research as they became known; always with an unconquerable enthusiasm and persistence that tore victory from the reluctant hands of adverse circumstances.

The account given by Doctor Trudeau himself in the simplest language, unaffected and without any attempt at literary scintillation, is a graphic description of an important chapter of the history of civilization because it bears on the awakening of the public consciousness to the need of guarding the people's health as one of the greatest assets of national wealth. Yet, it is simply a recital of his personal experiences, first in arresting the progress of the tuberculous disease, which had made his life in New York impossible, then in making the same beneficial influences in the Adirondacks available to others, particularly to those who could not enjoy them through their personal means, until in time, from small modest and even crude beginnings, the beautiful Adirondack Cottage Sanatorium of today stands as a monument of the indomitable courage and enthusiasm, the never-failing optimism of its founder.

A few things stand out strikingly in this personal account of Doctor Trudeau's experiences. First of all, his great faith in nature, in her kindly assistance to her sick children and as a corollary, his (one might say) childlike faith in, and certainty of, the loving guardianship of God. Then his persistence and undismayed tenacity of purpose

in working, experimenting, planning, continuing even though he had to feel his way and acquire knowledge, from experience, through many failures and handicapped by ill health.

One of the notable characteristics of Doctor Trudeau was his faculty of making lifelong friends, and this was manifested by the great affection in which they held him, even to opening their purses widely to his needs, needs that, yet, were not his personal ones, but those of his charges. And, finally, besides many other impressive and attractive traits, stands out preeminently his devotion to his wife, the constant, courageous, and helpful companion of his life and work, his helpmeet.

Doctor Trudeau, in his career, has overcome great difficulties, he has lived a rich life, that is, one by which thousands of others were benefited, as will be uncounted thousands to come. In the kindly, unassuming simplicity of his life, the steadfast forging ahead toward his goal—though this might be sensed but dimly—in the readiness to give credit to those who helped and aided him, Doctor Trudeau is a great man who lives in his work.

DEARBORN: "THE INFLUENCE OF JOY"

The Influence of Joy. By George Van Ness Dearborn, Ph. D., M. D. "Mind and Health" Series. Boston: Little, Brown & Co. 1916. Price \$1.00, net.

The author of this volume, Professor Dearborn, for years has made a special study of the physiology of the emotions—a task for which, as a physiologist and psychologist, he is particularly fitted. The results of this and other investigations on the subject should prove of deep interest to the physician, as well as of great service in his dealings with the sick, whose minds usually are as much in need of readjustment and reestablished equilibrium as are their bodies.

HOWARD: "THERAPEUTIC VALUE OF THE POTATO"

The Therapeutic Value of the Potato. By Heaton C. Howard. New York: Paul B. Hoeber. 1914. Price 50 cents.

This pamphlet is based upon an article contributed by the author to *The Lancet* (London) of April 11, 1914, in which he reported upon some interesting observations, to the effect that fomentations and other applications of potato-juice relieve the pain of swollen joints, and the like, in synovitis, gout, "rheumatism," and other like affections.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6224.—“Relief of Pain of Leg Ulcer.” G. L. S., Missouri, asks how we would proceed to relieve “the excruciating and unbearable pains in a case of leg ulcer of long standing.” Mechanical support elevating the limb, and the like, have afforded no relief whatever.

We can suggest several things that have been found of use. Menthol, 1 percent, in oxide of zinc ointment, usually acts as an effective local anesthetic. An ointment prepared from salicylic acid or sodium salicylate, in a base of lanolin, has the same action. A member of our staff strongly recommends orthoform.

It must not be forgotten that endophlebitis or thrombosis of one of the small vessels leading to the part, may stand in relation to pain and may require special treatment; and, finally, that the explanation of the obstinate and excessive agony in such cases often is found in a syphilitic history. All these are points which are offered for your consideration, and we must leave it to you to determine upon the best means to employ in any particular case.

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QUERY 6225.—“Tachycardia of Obscure Origin.” J. R. M., Missouri, requests assistance in the following case. A woman patient, aged fifty-seven years; present weight 124 pounds—reduced from 132 pounds six weeks ago—has been ailing for four months and steadily losing weight, although her only complaint is that she gets spells of shortness of breath. She has attacks of marked cardiac palpitation. She has no cough, no asthma, no discernable heart lesion, no bladder symptoms, no headache, no dizzy spells. Her appetite is good and her bowels are regular, and generally she sleeps well; in fine, about all that she complains of is that shortness of breath, besides weakness. Any exertion brings on an attack, which will last for about a quarter to a half hour.

Unfortunately, the clinical picture offered, doctor, is not very clear. We have here a woman fifty-seven years of age, who is losing weight (lost 8 pounds in the last six weeks) and complains of attacks of shortness of breath, the only objective symptom being, rapid heart action for which there seems to be no organic basis, and general weakness. The attacks are brought on by exertion. The chemist’s report on the analysis of the specimen of urine submitted shows an excessive elimination of total solids, also the presence of a trace of albumin, which means that there is some loss. Microscopical examination presents evidences of kidney disease, more particularly because of the presence of hyaline and granular casts and cylindroids; also of renal cells and red blood-cells.

We are not satisfied, either from the uranalysis or from the symptoms, that the renal affection is far advanced. The combination of short breath, rapid heart action, and general weakness rather leads us to suspect an intoxication with the internal secretion of the thyroid gland, and we should like to know whether there is any tremor, more particularly of the hands, also of the tongue when it is stretched out; furthermore, whether the thyroid gland is enlarged or indurated and whether any exophthalmos or bulging of the eyeballs is observable. In addition to this, it would be useful to know the blood pressure, both systolic and diastolic, taken at different times, sitting and lying down.

The attacks of tachycardia probably will be relieved by cactoid, 1-64 grain, placed on the tongue and allowed to dissolve there, the dose being repeated every ten minutes, when the symptoms are distressing, until the heart has quieted down. With that, the respiration also will be lowered.

In the way of general treatment, it will be well to make sure that elimination is sufficient. Even though the bowel action is said to be

"good," it will be well to give calomel, 1-10 grain every hour for ten doses, adding to every second dose 1-6 grain of podophyllin, and a laxative saline next morning—which latter may be repeated the second morning. If there are any symptoms of intestinal intoxication or of intestinal fermentation, the combined sulphocarbolates, and these followed by a course of the Bulgarian bacillus, will be of service.

It would be interesting to know the percentage of hemoglobin, as a further aid in determining the presence or absence of organic disease; otherwise, the purely neurasthenic or neurotic character of the woman's attacks must be kept in mind as a possibility. We do not suspect this possibility very seriously, though, because of the clear evidence of kidney disease.

QUERY 6226.—"Narcolepsy." C. N. S., New York, describes the case of G. H., a young unmarried woman of eighteen, who complains of excessive sleepiness. He writes: "Her family history is good. The patient lived in the East until about five years ago, when the family moved west. Previous to this time, she was supposed to be rather delicate, but one month after she moved she began to have her menstrual periods, and from then on improved in health and began to gain in weight. The menses now came regularly every twenty-eight days, without pain, for about eight months, when 'she took cold,' and she skipped one period. From that time on, her periods have been somewhat irregular, at one time having been suppressed for five months.

"About one year ago, she began having attacks of tonsillitis, and one month ago I removed her tonsils. For a year she has had attacks of what her doctor in the West called asthma. These may come on at any time, when she becomes choked up and short of breath; they last from one to four hours.

"The present complaint is, that she suffers from undue sleepiness. This condition began about three years ago and has been getting steadily worse. At that time, she was in school in Indiana and she says that she used to bite her lips and inside of her cheeks in an effort to keep awake. At one time, she went to sleep while eating her dinner and when some 175 other students were at the tables. Her sleepiness was not owing to lack of sleep at night, for she went to bed regularly at 9:30 p. m., and arose at 7:30 a. m.—but, feeling just as sleepy as when she went to bed. She frequently said to her mother that she felt

'so tired.' This condition has persisted until the present time. She may sit down in a chair in the middle of the day and in two minutes will be asleep, and so soundly that she has to be shaken to wake her. When she is asleep in the daytime, she sleeps quietly and does not dream, but during her night-sleep she dreams continually. Her dreams are generally of some such character as being chased and being unable to run, or similar disagreeable circumstances.

"Her habits are good, also her appetite; bowels are regular, moving at least once a day. She urinates four or five times during the day, once or twice at night; never experiences any burning or distress. She drinks considerable water, and uses no tea, coffee or alcoholic beverages. At the present time, she retires for the night at about 9 and arises at 7:30 or 8 o'clock.

"This young woman is 18 years of age; is 5 feet 3 inches in height; weighs 172 pounds (one year ago, she weighed 179 pounds); is very well developed; her hair is of fairly good length, not brittle, nor are there any bald spots, skin is clear and of fine texture; teeth are in excellent condition, no pyorrhea present; tongue is clean and of normal appearance; heart is normal as to size; heart-sounds are somewhat hard to hear, owing to the large amount of overlying fat, but they seem to be absolutely normal; no murmurs are audible; lungs are normal; abdomen and extremities are normal (genitalia were not examined); pupils are equal and react equally to light and accommodation; reflexes are normal; temperature is normal; pulse of good quality and is perfectly regular, rate 76; respirations is 17 to 18 per minute.

"Urine: normal in amount; specific gravity, 1021; fairly clear, amber-colored; slightly acid; no albumin nor sugar present; indican amount, normal; microscope reveals nothing but an occasional leukocyte or epithelial cell. Blood: hemoglobin, 80 to 85 percent; leukocytes, 8000; erythrocytes, 5,950,000. No differential count was done. No Wassermann test was taken.

"The patient's general appearance is one of robust, good health. She is of what would be termed a lymphatic temperament, one of the even-tempered individuals who seem to be 'always of the same even disposition.' One hardly could call her face expressionless, indicative of a possible myxedematous condition." So far this exceptionally fine presentation.

Some three or four years ago, a very similar condition was reported by one of our corre-

spondents, and at the time the nature and the causes of excessive somnolency were discussed at some length in this department. As a matter of fact, narcolepsy—the technical term—has not received much attention by the authors of textbooks; however, a most interesting article on the subject, contributed by Dr. Thos. W. Harvey, of Orange, New Jersey, appears in volume iv of "International Clinics," 21st series.

It is generally stated that excessive somnolency is to be regarded as a symptom of approaching uremia or diabetic coma. The condition, of course, is also observed in tumor or abscess of the brain or in cerebral syphilis. With an organic cause excluded, it may be the result of intoxication (gastrointestinal) or a manifestation of obesity, hysteria or epilepsy. Naturally, the management of each case must be based upon a rational conception of the causative condition; unless properly diagnosed, medication is not likely to prove of value.

Raymond describes narcolepsy as "a disease characterized by a sudden and irresistible inclination to sleep, coming upon the individual outside the hours usually passed in slumber, which is more or less periodic and may be of variable duration." He says further that such form of sleepiness may be owing to general diseases, as, for instance, gout or rheumatism, or renal, hepatic or gastrointestinal intoxications. It also may be attributable to obesity—and we observe that this patient is decidedly obese. He says that "there is a very strong resemblance to epilepsy, in certain cases." Two cases described by him, very much resemble petit-mal. He thinks that most cases of narcolepsy, not associated with or dependent on some incurable disease, have a tendency to get well under conditions favorable to good health.

You will remember, of course, the fat boy in Dickens' "Pickwick Papers," of whom the squire frequently remarked, "Damn that boy; there he is—asleep again." You will also realize that most fat people have a tendency to be more or less somnolent at times, especially if their elimination is poor. Hence, the popular expression, "a sleepy fathead." Several writers recognize the association of excessive somnolency with obesity and have considered it to be caused by certain hitherto unrecognized toxins.

One case is described in the literature in which the attacks of sleep were induced by any pleasurable emotion; then, again, such profound unconsciousness has occurred only

in the dentist's chair or while the individual was undergoing some minor operation without an anesthetic.

In a case mentioned by Harvey, a young woman, during her first pregnancy, would fall asleep and remain somnolent for two or three hours, and during this period could be aroused only with difficulty. Strangely enough, at her confinement, such a seizure occurred and she slept through the last expulsive pains without the slightest knowledge of what was going on.

Doctor Dana, in a recent interesting paper discussing the phenomena of sleep, divides the attacks of narcolepsy into three groups: (1) Epileptoid sleeping states corresponding to petit-mal; (2) hysterical sleeping states; (3) cases when it is difficult to find a cause. The predisposing cause is, a neuropathic constitution. Among other exciting causes, he mentions malaria.

In the case under consideration, if it is at all possible, we should make a thorough examination of the reproductive organs. We should also institute thorough eliminative measures—renal, dermal, and intestinal—and place the young woman on a low protein diet. Do not forget the possibility of thyroid insufficiency. On general principles, we should be inclined to administer small doses of thyroid gland, preferably in conjunction with the arsenates of iron, quinine, and strychnine. Change of scene and surroundings should also be recommended.

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QUERY 6227.—"Proof of Value of Active Principles." M. B., Nebraska, in a most interesting letter, advances his present opinion (which further experience will, we hope, modify) of the active principles and "positive-therapeutics" methods generally. He writes:

"My father, after many years of their use, is a firm believer in the active principles. Perhaps they are good; I am always open to conviction on these things, but I have had nine years of the most rigid kind of scientific training and have acquired habits of skepticism relative to everything that has not been accurately checked by laboratory methods. When I read the enthusiastic letters of members of your "family," I can sympathize with their enthusiasm; but there come into my mind the thousand and one avenues of error which may beset their observations.

"My training was received at — Medical College. As you know, their pharmaceutical horizon is limited and their faith in the specific and selective action of drugs very

scant. But, their methods of arriving at conclusions have appealed to me; I have worked with them and they seem correct.

"Your teachings would be beautiful, if they could be shown to be true. I wish I could believe in them. But how do I know they are true? I do not say they are not. I merely say, I do not know. Must I take the word of clinical observers as to what they *thought* they saw, without a single measurement or a single accurate quantity reported? I observe that chiropractors (and I mean not the least opprobrium by this comparison, and should not think of putting you in the same class with those people; still, it makes a good illustration, if you will pardon it) also are very enthusiastic about their methods, after many years of practice and clinical observation. So, likewise, are Christian Scientists. Please pardon my writing this way. I do not know for what particular purpose I am doing so, but I can give my reason: I am puzzled."

First of all, doctor, let us point out that the active principles are definite chemical substances, and they are just as definitely acting remedial agents. If you will study the action of the alkaloids and allied products, you will surely have no difficulty whatever in convincing yourself that in administering these substances in small repeated doses to effect (remedial or physiological), you are practicing a precise therapy.

As a matter of fact, in years gone by, this entire field has been thoroughly covered, not once, but many, many times, and thousands of physicians throughout the country who, like your father, used the alkaloids and allied products know from experience (and, after all, experience is the best teacher) that the agents and methods we have so strongly recommended produce results heretofore deemed "impossible" of accomplishment.

You ask, "Must I take the word of clinical observers as to what they thought they saw?" No, indeed. You must simply accept their statements as a *basis* upon which to build your own observations. Still, it is fairly safe to assume that if several hundreds or thousands of common-sense, successful practitioners see the same thing they may be credited with a reasonable clarity of vision. For instance, if you give A 1-6 of a grain of calomel every half hour for four to six doses and secure as satisfactory calomel-action as would follow the administration of five times the amount of drug in one dose, without the undesirable action of the latter, you, naturally, are inclined to repeat that treatment; then, if B, C, D, and E all respond in exactly the

same way, and you find that several hundred other practitioners also had precisely the same experience, you are reasonably safe in assuming that the small dose repeated at short intervals to effect, produces more desirable results than will a single large dose.

We, perforce, until we have had wide and varied experience, have to accept the evidence of other people. For instance, a child very soon finds out that unpleasant sensations follow the application of the bare finger to a hot stove lid; you may never have put your finger upon a red hot stove, but, if you are told it will hurt if you do, you do not show a very great amount of common sense (though you may reveal an investigative nature) if you put your finger on the next piece of hot iron you find. Then, if you do so, I am quite positive that from that time forward you will assert positively that the contact of human tissue with hot iron produces vesication and pain even though the action of the hot iron upon the human tissue has not been demonstrated to you microscopically. Another illustration: You are hungry and you have been led from your infancy, to believe that that feeling of emptiness in the region of the "equator" can be assuaged by the putting of food into the mouth. As a result, you eat and feel satisfied, and every time you feel hungry and eat the sense of hunger disappears. You only have the evidence of your sensations, because it is impossible for you to demonstrate each and every time with the test tube and microscope that the food you had in your mouth is assimilated by the cells and does not pass unchanged through the digestive tract.

Certain definite results invariably follow the execution of certain actions, and there is sufficient evidence to warrant you in testing the active principles along the lines laid down by prior observers.

Do not for one moment believe, doctor, that all these observations have been made by clinicians. An immense amount of laboratory work has been and is being done, and there is hardly an active principle that has not been physiologically tested time and time again. You can easily verify this statement by consulting, for instance, the files of the *Archiv f. experimentelle Pathologie u. Pharmacologie*.

There is a vast difference between the educated physician seeking the best available means to obtain a desired result and the Chiropractor who, as you say, is enthusiastic about his methods. His enthusiasm is based entirely upon the monetary returns that will

follow his manipulations. The true physician, as you know, also sometimes gets a monetary return, but quite often has merely the satisfaction of knowing that he has conquered a disease-process that otherwise would have crippled or destroyed a fellow human being.

Please, do not for one moment confound Osteopaths, Chiropractors, Christian Scientists, and all that ilk with the positive therapist.

Doctor, your letter proves that your intellect is too keen and your analytical sense too well developed to cause you to "balk" at a trial of tried remedial agents simply because each one of them has not been definitely tested by you in the laboratory. We of THE CLINIC are doing most of that work for the practitioner, and when we present a product you may rest assured that it is as nearly perfect as modern scientific methods will permit.

QUERY 6228.—"Aletris Farinosa Is False Unicorn." C. W. H., Texas, says that aletrin is alleged to come from aletris farinosa, or true unicorn, while by others false unicorn is given as the source. Which is right? There is a vast difference, he points out, between the action of true and of false unicorn, and to use them interchangeably might mean trouble.

Aletrin, or, rather, aletroid (for it is a concentration) represents the combined principles of aletris farinosa (false unicorn root, blazing-star, stargrass, starwort). The name unicorn root is more properly applied to chamælorium, or helonias.

As you are aware, the commercial drug supplied under the name of aletris farinosa is generally the root of chamælorium. The two kinds of roots have no resemblance, in fact, are utterly unlike; yet, the substitution of chamælorium for aletris has been so general that Professor King, in a description of the root of aletris, describes that of chamælorium, and the American Dispensatory states that, owing to "the confusion which resulted from the substitution of the root of aletris for helonias, very erroneous statements had been made regarding the status of the drug."

Felter (Amer. Disp.) considers aletris as being a simple bitter tonic and stomachic, and as such recommends its use in indigestion, anorexia, flatulence, colic, borborygmi, and so on. A good preparation of aletris farinosa does, unquestionably, exert a tonic influence upon the reproductive organs, and may be given in conjunction with helonias. The

latter drug has also been found beneficial in dyspepsia, anorexia, malassimilation, and so on.

The two drugs are fully described and the nomenclature is commented upon in King's American Dispensatory.

QUERY 6229.—"Metritis. Ulceration of Cervix." E. T. S., Ohio, writes: "One class of patients that gives me considerable trouble consists of women that are or have been married and who present a large, boggy uterus, usually an ulcerated os, with either a thick and purulent or gelatinous discharge continually covering the mouth of the womb; also, some pain in one or both ovaries. These women usually are 'run down,' always feeling tired. What can be done with these patients, without performing operation?"

Women suffering from chronic metritis and cervical catarrh usually respond promptly to hot alkaline antiseptic douches and the subsequent application of magnesium-sulphate (depleting) suppositories. The treatment of these and similar conditions is described fully in the articles headed "The General Practitioner as a Gynecologist," published in these pages during 1911 and 1912, especially the fifth article, which appeared in the January, 1912, issue.

Where eroded or ulcerated areas exist, first relieve the uterine congestion with the douches and suppositories, and then apply to the cervix, with a cotton mop, a solution of silver nucleinate; then pack the vagina with gauze strips the upper end of which has been saturated with a combination of ichthyol, iodine, and glycerin. An excellent formula is this: Ichthyol, 2 drams; tincture of iodine, 1 dram; boroglyceride, 2 drams, glycerin, sufficient to make 4 ounces.

The iodine- and ichthyol-content may be increased. Practically the same results may be secured with equal parts of carbenzol and some bland oil. The gauze should not be allowed to remain in place longer than for forty-eight hours. Before replacing, a copious douche should be administered.

Internally, some such tonic as the arsenates with nuclein will be indicated.

QUERY 6230.—"Keloid?" J. A. J. Illinois is treating what he considers a keloid in a scar consequent upon an operation for gallstones. About a year ago, the Doctor applied light treatment, using a 1000 watt light. He gave daily treatments for five days, then a sitting every third day, for five treatments, and, finally, once a week for two treatments—

twelve treatments in all; with these results: The color of the scar tissue changed from purple to a bright red, with a pale-red area along the edges and at the ends of the scar. All pain and tenderness had left, but these began to show again toward the end of the second seven-day of the light treatments. The area is not at present as hard as it was before the light was applied. Our correspondent wants to know how long it will take for a cure, if such is possible.

You are aware of course, doctor, of the fact that the treatment of keloid is extremely unsatisfactory, in that it requires a very long time. Some excellent results, however, have followed the long-continued use of the x-rays after the excision of the growth.

J. Keogh Murphy an English surgeon, advocates treatment by means of chlorinations (i. e., applying sodium-chloride in solution on the negative electrode of a battery), but insists that the treatment must be thorough and continuous. He also asserts that x-ray treatment is likely to give even better results.

The present writer is inclined to think that your patient's condition probably would be benefited by applications of thiosinamin compound, which, as you know, counteracts the overproduction and degeneration of connective-tissue cells. This preparation would have to be used hypodermically, of course.

Your own experience suggests that the treatment which you employed was beneficial, but that you did not give "dose enough" and also applied the treatments at too long intervals. The indication certainly seems to be that you continue the same form of treatment, only more frequently—say, once in four, five or six days, according to results received—while, also, you might combine it with the thiosinamin compound.

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 QUERY 6231.—"Arsenical Paste." E. T. McG., Nebraska, writes: "I have a patient who has a cancer on the lower eyelid extending around to the center and up on the upper lid also. I have seen a "cancer cure," consisting of zinc chloride and pulverized sanguinaria root, recommended. Is water to be used in making this paste? Also, should some of this paste get into the eye or on the eyeball, what would be the result? Would it destroy the eye? Lastly, ^{is} hat, in your opinion, is the best cancer paste?"

If this is an epithelioma, location is unfortunate and caustics must be used with great care in the neighborhood of the eye. Any arsenical or zinc paste coming in contact with the eye would certainly imperil it; in any event intense pain and a rebellious lesion would result.

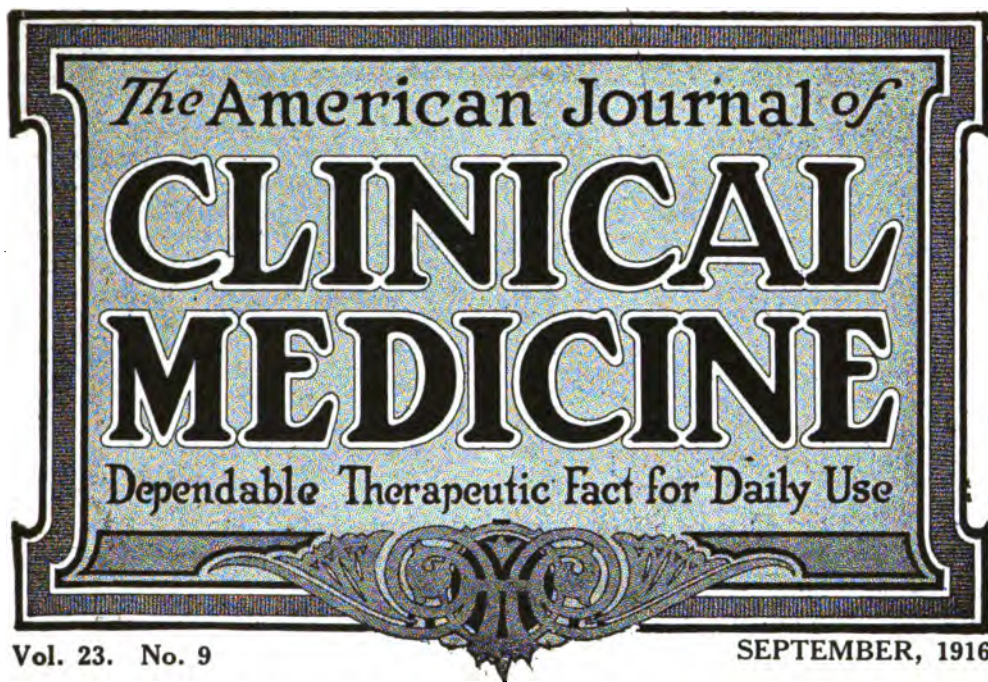
One method of treating such neoplasms is as follows: Mix arsenous acid, 1 dram, and powdered acacia, 2 drams. With the aid of water make this into a paste about the thickness of a rich cream, mixing enough to cover the lesion. But be sure to cleanse the sore thoroughly first with hydrogen peroxide and then with boric-acid solution, drying well with cotton. Leave this paste (laid on about the thickness of a silver quarter) in contact with the cancerous growth for twenty-four hours. The pain will be considerable and there will be some swelling and induration about the affected part. At the end of that period remove the arsenical paste and apply some one of the glycerinized kaolin pastes on the market, hot and thick; repeating constantly until the slough separates and falls away. Now you will have a clean sore to deal with. Cleanse this well, dry, apply a few small skin grafts and dress with bovine, prepared bovine blood or sanguiferrin on iodoform gauze, protecting the grafts with a strip of perforated rubber tissue; over the bovine-soaked gauze place another sheet of rubber tissue to retain the moisture, then some cotton and, last of all, a snug bandage. We believe this is the best method of handling skin cancer.

Internally push arsenic, nuclein, conduranguin, and chelidonium.

The *poudre caustique de Frere Cosme* (a celebrated French formula) has the following composition: Acidi arseniosi, grains 10; hydrargyri sulphidi nigri, grains 40; pulveris carbonis animalis, grains 10. The powder is made into a paste with a thin acacia mucilage and applied as described.

In the present instance you might find it preferable to adopt Candler's plan, namely, to 75 parts each of ethylic alcohol and distilled water add 1 part of arsenous acid. Clean up and dry the lesion and apply the fluid thoroughly. In twenty-four hours an eschar will have formed. Then keep on a poultice till the eschar separates, applying between the poultice and surface one thickness of gauze soaked in thuja.





A Self-Supporting Hospital for Self-Supporting Patients

THE group-idea of medical attendance is gaining ground, it being realized more generally that no single medical man can know all that is to be known about disease, and that cooperation rather than a division of work must be resorted to in order to arrive at a solution of the many problems which the constant growth of medical knowledge has presented. Team-work is not solely being practiced in the large hospitals, although there it has been developed and made useful to a remarkable degree. As a matter of fact, for years there have been in existence, groups of physicians, associated for cooperation and mutual assistance, the individual members of these groups taking over special duties, while each one works for the benefit of the whole as well as for that of all their patients; the interests both of patients and physicians being guarded carefully by each of them. These small groups of physicians have been successful in many places, despite the many difficulties encountered in the practical working-out of the idea, and even though in isolated instances the undertaking failed, for one reason or another.

The modern public hospital is a develop-

ment of the principle of charity, under which the sick poor are treated at the expense of the public—and at that of the physician. Everybody else, from architect, builder, and workman to the attendants and servants, finds his means of livelihood, the expense of which is met by the community and by private or organized charity. The physician alone is obliged to find his remuneration in the “experience” and in the so-called prestige which association with a hospital are supposed to provide. These hospitals are doing excellent work, thanks to generous endowments and—not the least—to the altruistic activities of the attending physicians. These institutions benefit the poor and provide for them medical services of the highest possible efficiency and completeness. For the convenience of those who have the means to meet the great expense necessarily involved, private hospitals are conducted; and here persons to whom a dollar is simply a convenient unit for counting money can command the services of an almost unlimited number of medical attendants, as they may be necessitated by their more or less complicated ailments.

It is the people—the large middle class,

the smaller business men, the salaried employees, tradesmen, workmen—to whom each dollar represents one-hundred-cents' worth of hard and continued work and whose means of livelihood cease with illness, for whom no suitable provision exists in case of illness; and this in spite of the fact that they constitute the most important element, the backbone of the nation. If illness overtakes any of these, they are forced to accept either charity or the alternative of mortgaging their very souls, in order to raise the means for treatment. This is wrong. It must be possible to establish the practice of medicine on a reasonable business basis, by virtue of which people of moderate means may be enabled to receive efficient medical services without being pauperized, while at the same time the physicians will not be obliged to give their services free to every comer, no matter how great are their own personal necessities and those of their dependents.

In *The New York State Journal of Medicine* for July, Dr. J. Bayard Clark has an important article on the subject of a self-supporting hospital which is to be an economic step toward bringing what is best of present-day medical and surgical skill within the means of the many. According to Dr. Clark's idea, a hospital, such as he has planned, would provide accommodation for the sick of the middle class, those of moderate means; it would give them the benefit of all the special knowledge at the command of a large staff of physicians, each of whom, respectively, is supposed to be proficient in one or more particular fields. Simultaneously the attending physicians will have their own interests guarded in like manner as those of the patients are taken care of, in that they will be certain of suitable remuneration for the services which they extend to their patients.

Doctor Clark's hospital is to be a business venture pure and simple, without the handicap of endowment or of anything even remotely approaching charity. The sick are to receive the highest skill and the best services in return for a reasonable charge, sufficient not only to cover the expenses of conducting the enterprise, but also to include appropriate compensation for the attending physicians.

This hospital, as planned, is to accept both indoor and ambulant patients, all of whom will be cared for by all members of the staff whose special knowledge and training will prove of assistance in any given case. It is believed that the fees from the ambulant patients alone would go far toward making

possible the moderate rates intended for the indoor ones. Certain it is that the plan provides for a far-reaching degree of team-work and efficiency of medical care and likewise for adequate compensation for all those whose services are called upon.

Doctor Clark's plan impresses us as being preferable to that of the "pay consultation clinic" recently established in the Massachusetts General Hospital, in Boston. We believe that its fruition would go far in the direction of solving the difficult economic problems now burdening the medical profession, while at the same time providing "better doctors for less money" in a manner not objectionable to the beneficiaries, but rather by a system that will uphold the dignity of the medical profession while at the same time enhancing the efficiency and usefulness of its members. Furthermore, it would, in addition, preserve the dignity of the self-supporting patient, making him feel that he gives a fair return for the aid received by him; that he is not the pauperized object of charity, and yet, receives proper assistance in his need.

If Doctor Clark's plan is feasible financially—and we hope sincerely that it is, we anticipate that it will be carried into effect in many cities and towns of our country.

In our nature there is a provision, alike marvelous and merciful, that the sufferer should never know the intensity of what he endures by its present torture, but chiefly by the pang that rankles after it.

—Nathaniel Hawthorne.

CURING TUBERCULOSIS

What a God-send it would be if physiologic therapeutics really were physiologic therapeutics. There is nothing more needed today than the instruction of our medical students in the principles underlying the practical application of therapeutics. This does not, by any means, signify merely the employment of drugs; it means, rather, the study of the objects with which treatment should be applied and the principles of treatment itself.

This leads us inevitably to what we have always urged upon the medical profession, and that is, the study or physiology.

Take, for instance, the treatment of tuberculosis. At intervals, the attention of the world is arrested by the announcement of some new remedy for this disease. No matter what the treatment is, it does good for a while. In fact, it is not easy to see how any treatment can be devised that would

not benefit the patient—only with one proviso; namely, that the patient should be sent to bed at the beginning of the treatment. Everything, from codliver-oil to tuberculin, will be followed by a decided improvement in the patient, if only he is compelled to rest. Time and again good observers in hospitals have announced that patients begin to improve, without any other treatment whatever, if only they are confined to their beds in clean, well-ordered hospitals and fed judiciously.

No outside remedy cures tuberculosis; the patient must cure himself. To do this, he must assemble his forces and wage an unremitting war against the invading micro-organism. He must not neglect anything if he would win. No matter how inconsequent they may appear, these little trifles in the aggregate make up the difference between success and failure.

One of the cardinal points in the management of tuberculosis is, the presence or absence of fever. If elevated temperature is present, we may be sure of one thing, namely, that there is a vast increase in the radiation of liquids from the surface of the body, with a corresponding disposition to dryness of the tissues and consequent absorption of fluids into the blood. This means, more than for any other class of chronic patients, that the chronic tuberculous person is subject to fecal autotoxemia, the liquids being absorbed from the alimentary canal and carrying with them an unusual quantity of toxins. It is for this reason that the simple process of cleaning out the colon and keeping the tract medically aseptic causes such an enormous difference in the wellbeing of the consumptive.

We may say that the treatment of tuberculosis, therefore, consists, first, in putting the patient to bed; second, in completely cleaning out his alimentary canal and keeping it clean.

This writer has, for many years, been disposed to prefer for this latter purpose the sulphocarbonate of calcium. These patients always need lime, at any rate, and two scruples a day of the sulphocarbonate, if chemically pure, suffices to keep the stools free from undue odor, while at the same time it checks the disposition to hemorrhage and to colliquative perspiration.

The next step is necessarily the regulation of the diet, the object being, to administer to the patient as much nutrient as he can digest and assimilate (but no more!), so as to favor the reparative processes as much as

possible. Care must be taken not to overload the stomach or the blood.

After all though, there is nothing that in any way can replace the conscientious, careful study devoted to the individual case by the physician. Observe these three therapeutic principles, and you may leave the rest—all the tuberculins, creosotes, and all other specifics, germicides, and the like, comprised in the list.

However, that does not mean that we should not avail ourselves of these agents when they are called for. Antiseptic inhalations, measures to allay cough when excessive, to quiet vascular turgescence, which might otherwise result in disastrous hemorrhage, are of value. We may say that the patient is sure to be benefited by the judicious treatment of any disorder that we may detect in his physiologic functioning. One of the symptoms that puzzled us considerably has been the presence of a subnormal temperature throughout most of the day. This indicates a low degree of metabolism and calls for especial care, since it is now recognized as one of the leading symptoms of tuberculosis.

The present writer feels like suggesting here one of the group of powerful stimulants of metabolism that from time to time are recommended as specifics in tuberculosis. Among these we may number mercury, gold, phosphorus, and platinum, adding to the list atropine. Its effect in tuberculosis-cases is so decided as well to justify an extended study, far more extended than it has yet received.

No remedy has been more frequently reintroduced as a specific than mercury, and this may be easily comprehended when we take into account its antiseptic properties and its tremendous stimulation of the eliminants, of the metabolic functions in general. Gold is a remedy with similar properties, but exceedingly dangerous to the incautious user. When salivation from this remedy once is established, it is a far more difficult matter to control than that of mercury. Platinum is practically unknown in medicine. All that we can say about it is, that it ranks with the two preceding ones in a group. Some forms of phosphorus might well be studied, especially the phosphides of some of the metals. These remedies are too potent to warrant the neglect that at present is shown them. This writer has, for some time, been extending the field of zinc phosphide, with growing appreciation of its remarkable powers. If the chemists could supply a phosphide of copper

it might prove of especial value in combating infections by vegetable parasites.

Booßt and the world booßt with you,
 Knock and you're on the shelf,
 For the booßer gets sick of the man who kicks
 And wishes he'd kick himself.
 Booßt when the sun is shining,
 Booßt when it starts to rain;
 If you happen to fall, don't lie there and bawl
 But get up and booßt again.

SENILE NEPHRITIS

From the first, we have watched with interest Doctor Nascher's attempt to establish the medical care of the aged as a specialty. There is no reason why geriatrics should not constitute a specialty, the same as does pediatrics. In fact, there is for it much more reason, for, the aged are far better worth looking after than children. We speak from the standpoint of ourselves being somewhat advanced in years and progressing in that direction as year after year goes by. Hence, our peculiar personal interest in this matter.

Doctor Nascher has carried out his plans with marked ability. The articles from his pen dealing with the diseases of the aged, which have appeared in a number of medical journals, have always been interesting, and he has brought up a great many points that are overlooked by the ordinary practicing physician. However, while we have found very much to commend in these papers, it does not follow that we always agree with our eastern colleague, and this is especially true of the paper of his appearing in a late number of *The New York Medical Journal*.

In this article, Nascher calls attention to Walsh's studies, which demonstrate a progressive fibrosis in the kidneys, from birth and continuing throughout life. This degeneration consists in an increase of the connective-tissue fibers, which is greater than the growth of the kidney substance. Many times it results in the small contracted kidney of old age. According to Nascher, this change is not pathologic, but physiologic; a condition to be expected.

Here is where we are compelled to differ with Doctor Nascher, at least until one point has been cleared up. If the condition in question is strictly physiologic, it must occur in all individuals as they approach the given age. If it is not normal, nor universal, then there exist differences in the conditions of these individuals, which in some give rise to the contraction and atrophy of the kidney, while they do not in others. It is reasonable to believe that, if a man's diet or his mode of

life in general be such as to cause a continuous irritation of the renal structure, we should have in due time a hyperplasia of the connective tissue, together with atrophy of the renal excretory cells.

It would be well, therefore, before we pronounce this condition strictly physiologic, to know something about the life of those in whom the condition is found, and especially with reference to four points; namely: first, the use of alcohol; second, the use of tobacco; third, the use of foods containing the volatile oils, such as pepper, horse-radish, and other condiments; fourth, and preeminently, as to the existence, through prolonged periods, of fecal toxemia which might induce irritation of the kidneys in their endeavor to eliminate vicariously the toxic principles absorbed from the intestine. It is our belief that one or more of these four conditions will be discovered whenever the history of such a patient can be secured; and that, as we believe, if persons more or less numerous, reach advanced age without suffering from this form of renal disease, they will be found to have been exempt from these four conditions.

We are not saying or intimating that no other condition will give rise to the malady in question; that it is a malady, though, we firmly believe.

According to Nascher, in the normal senile contraction, the fibrosis is uniform throughout the entire structure of the kidney, whereas in pathological forms it is only partial. Still, it is exactly such a uniform occurrence of fibrosis that we should expect when the cause is an undue irritation of the kidneys by the continuous passage through them, for many years, of such noxious substances as have been indicated above.

Doctor Nascher is quite right, however, in his assertion that in what he terms normal cases there may be practically no symptoms whatever of the kidney disease. This is largely because the man, in aging, has learned to avoid exertion to a greater or less extent—generally to an increasing extent; and, by limiting his exercises to his needs, he avoids those calls upon the kidneys for extra work that will demonstrate their insufficiency. Patients who have recovered from the acute form of nephritis, and even from chronic desquamative nephritis, exhibit in their after life this same peculiarity. They are free from symptoms, unless some overexertion throws an extra call upon the kidneys, to which they are unable to respond.

We should try to avoid the too common error of assuming that our knowledge, or even

that of the entire medical profession taken as a whole, is coterminous with truth itself. We physicians know a lot, but there are yet some things we do not know, but which in time we may learn, if we keep plodding on.

Let us take the common case of an elderly man, with impaired powers of the kidneys, and a destruction of kidney tissue that we are in no wise able to replace. Nevertheless, the patient still is alive and such renal tissue as he possesses still is capable of sustaining life. The problem, therefore, is to preserve what remains to him of health and of kidney structure.

We begin by relieving his kidneys of all extra work, carefully shutting out the four sources of irritants above mentioned. We also limit carefully the amount of physical exertion the man is permitted to undergo, but, on the other hand, we do not fall into the mistake of prescribing absolute idleness. In every instance, this is an individual consideration, and we shall have to be governed largely by the visible results; increasing or diminishing the amount of physical exertion allowed each day, according as the results may justify.

We know that thiosinamin has the effect of retarding the development of fibrous connective tissue or even of causing its dissolution to some extent. I do not mean that no other substance will accomplish this. For my part, I firmly believe that we have in zinc phosphide an agent that will do the same thing, and more.

It has been my practice for years to regulate the vascular tension in this class of patients, by a daily dose of veratrine, carefully gauged to the condition. I have given this to certain patients for a number of years, without missing a day, and have never known any bad results to follow. On the contrary, I believe this use of veratrine has been the means of prolonging the subject's life in most instances, and this even to a point that at first I scarcely should have believed possible. By its use, we increase elimination, while, in relaxing the blood-vessels, we improve the nutrition of the entire body in that a freer supply of nutritive material is thereby made possible.

Veratrine has the reputation of increasing the output of waste matter. It does not appear that it increases metabolism, but simply aids in carrying out of the body the waste material that otherwise would accumulate. We do not believe that the quantity of daily output of waste is increased by this agent. It promotes the removal of these

waste matters from the body, instead of allowing them to accumulate in the cells or the intercellular spaces. As a rule, large doses of the veratrine are not to be recommended. We have many times secured from $\frac{1}{2}$ milligram, three times a day, all the benefits capable of resulting from this drug, and more than from any other known medication.

Thiosinamin has been in the hands of the profession a good many years, yet, despite its enthusiastic advocacy by the prominent men of the country whence it came to us, we are not yet sure that it possesses much activity when administered by mouth. Given subcutaneously, there is no question as to its action; in our mind at least. However, in order to obtain best results, we always conjoin massage of the affected parts during the period of turgescence following the administration of each dose.

We think that all we should be justified in saying, after a good many years' use of thiosinamin, and also of piperazin, is, that these remedies may in some cases pretty nearly accomplish as much benefit as can be obtained from veratrine. As yet we have had no experience with Nascher's remedy for senile arteriosclerosis; which is, amorphous phosphorus in 1-grain doses three times a day. We should dread that this agent might also arouse a very undesirable sexual activity. Hence, we have preferred remedies more familiar to us, but without this objectionable feature.

One of Nascher's points is so important that we must take the opportunity of emphasizing it, namely, where he says that many times the death of aged people has been hastened through the renal stimulants given to overcome urinary suppression in acute nephritis. We sorrowfully confess that our own experience has been the same. The tremendous peril incurred by administering such remedies in any condition in which obstruction to the discharge of toxins through the kidney is present does not seem to be appreciated by the profession at large.

This is emphatically one of the conditions in which the first rule should be that of doing no harm. Especially is this true since, in quite a large proportion of cases, nature, if let alone, will reestablish the secretion far better than we can do. However, it may sometimes be deemed advisable to endeavor to secure vicarious elimination through the bowels, by injecting a cold saturated solution of salt. This causes a tremendous watery evacuation and thus carries away a certain proportion of the toxins, enough sometimes

to relieve the kidneys of their congestion and allow them to resume their operation.

There is one other point on which we differ with Doctor Nascher, and that is, the tendency of these patients to disobey our rules in regard to diet and other points about personal hygiene. Quite the contrary, we have found them to be the most amenable to reason of all our patients. As a man approaches the end of his life's journey, he ordinarily becomes more and more solicitous to postpone that ending as long as possible. He takes more vital interest in his own health, and we have, consequently, less difficulty in inducing him to follow our directions.

Nascher states emphatically that acute nephritis in the aged is the result of infection, usually extended from the bladder, while their cystitis is almost invariably due to the use of the catheter. Even though antisepsis in the use of this instrument is practiced, it is only a matter of time when cystitis will be induced by it. For this reason we would say, that the treatment of acute nephritis in the aged should begin by paying attention to the function of the bladder when first that function is disturbed or impaired. We should not wait until catheter-life has been established, but the first indications of failure in the expulsive power of the bladder should be met by appropriate remedies.

This study well repays the physician, and, if he will look into his arsenal of weapons he will find excellent remedies for his cases of difficult micturition. If, however, he is obsessed by the idea that there are only two remedies worthy of a physician's consideration (to wit, the serum and the knife), we can only extend our heartfelt condolence to his patients.

There is a great deal of advising and very little faithful performing.—Carlyle.

THE ASPIRIN-PATENT EXPIRES SOON

No doubt every reader of this journal has seen the newspaper advertisements of the Bayer aspirin-tablets. Large space is being taken and thousands of dollars are expended to advise people to purchase only aspirin-tablets stamped with the word "Bayer" in the form of a cross. The purpose of these advertisements, it is stated, is, "to protect the public against spurious and adulterated aspirin." The product is offered in handsome embossed tin "pocket-boxes of 12" as well as in bottles of 24 and 100. In this same manner, antikamnia started on its ethical toboggan-slide.

The "why" of this large expenditure is readily understood by those who know that the patent on this product expires February 27, 1917. After that date, any American manufacturer may make and sell aspirin and it will probably be possible to produce it at a greatly reduced price. This synthetic can be manufactured easily and cheaply—in fact, it was made in large quantities by a number of American chemical manufacturers while the patent in question was under litigation. The profits to the patentee have been, and are, enormous, while the infringing American firms were financially unable to carry the case to the upper courts—a fact that possibly may explain the outcome of the suit. It may be added that the validity of the Bayer patent has never been acknowledged by many of the most competent legal and pharmaceutical authorities.

Knowing that they can no longer easily hold their grip upon the medical profession when American chemical manufacturers enter the field, the house of Bayer (which heretofore has promoted this product solely through the medical profession) has now gone directly to the lay public. By this action, aspirin becomes a subject for general lay exploitation and self-medication; the doctor thereby being eliminated.

It is nonsense to maintain that the brands of aspirin that will be placed upon the market by the great competing pharmaceutical concerns after February 27, 1917, will be "spurious and adulterated" or that other people can not, and will not, produce just as good aspirin as does Bayer. But, if the laity can be convinced that this is so, the continued suggestion of this product as a cure for everything, from headache to toeache—everything in which pain is a symptom—will continue to bear rich financial dividends for the Bayer corporation; and doctors, too, will be influenced. It is the old specious patent-medicine, "use-only-the-genuine-with-the-name-blown-in-the-bottle" appeal, very skilfully worked over by a clever ad-writer, to meet "modern conditions."

There is, of course, no legitimate objection to the firm of Bayer using its strongest efforts to hold the aspirin business. Their product is good and they have a right to say so; and their tablets undoubtedly are of full dosage, and physicians should know this. But, to convey these facts to the laity; to promote their product (a powerful one, capable of doing harm as well as good) for self-medication; and to do this by plastering with the mud of insinuation the American chemical

and pharmaceutical manufacturers now struggling to secure a foothold, will not serve to increase the popularity of the house of Bayer with the medical profession of this country, providing the facts are understood.

There are physicians today who denounce and condemn facts which they do not understand with about the same spirit and vindictiveness that characterizes our forefathers.—T. D. Crothers.

DR. JOHN B. MURPHY

We shall not undertake to give our readers a sketch of the life of the late John B. Murphy, whose untimely death at the age of 58, from disease of the heart, no doubt already has been brought to the attention of every reader of *CLINICAL MEDICINE*. The details concerning his career have appeared in nearly every newspaper, and extended biographical notices will, of course, be published in *The Journal of the American Medical Association* and in other professional publications.

We do, however, wish to give our testimony of appreciation of the work and worth of this remarkable man—one of the greatest surgeons of his day, a man whose name is known to the profession throughout the world, and who has brought honor to the great city of the middle west which we also call home. Doctor Murphy was one of the greatest men of his time—not only a great surgeon, but a farsighted, deep-thinking, high-principled man of science. May Chicago have many others like him.

BANISH POISONOUS FLY-BANES

No man can practice medicine very long without being impressed with the number of ailments that might easily have been prevented by the exercise of a very little thought. But, then, common sense is one of the most un-common attributes of humanity.

Take as an instance this matter of the methods of ridding our homes of the fly- nuisance—fly-menace we might better say. *The Journal of the Michigan State Medical Society* got down from its high-science horse last November and enumerated no less than 22 instances of arsenical poisoning of children, the arsenic in every one of them being derived from some form of fly-poison standing about. All the victims were under six years of age, consequently too small to realize the danger, even if warned. But, then, how many of the mothers take the trouble to warn their children, even if they themselves are aware of the dangerous nature of these prepara-

tions? To the ordinary housewife, a fly-poison is just fly-poison, and she doesn't trouble her head about thinking further.

The legislature of the state of Michigan has passed an ordinance "regulating" the sale of such poisons. That is not enough: the law should prohibit their sale altogether, since there are at command safe and effective substitutes for exterminating flies without periling the little ones of the household.

The Child Betterment Bureau, Inc., of Chicago proffers an act for legislative consideration, which provides for prohibiting the sale of any kind of fly-killer of a poisonous nature, unless it is so "prepared, constructed or guarded" that it be inaccessible to children. But who can set limits to the capacity of an urchin in the laudable pursuit of knowledge by personal investigation—yes, what limits are there to the criminal carelessness of many grownups? To use the apt term of *The Lancet-Clinic*, in animadverting on the appropriation of \$5000 for the study of the causes of crime and poverty, it is like "spitting upon a conflagration."

What's the matter with sticky fly-paper? Nothing at all—it's all right. Of course, baby will try to eat it, but it will try the experiment only once, and, beyond getting badly "stuck" on the proposition, it will not be hurt. The sight of the multitude of flies caught by a glutinous sheet will serve as a good object-lesson as to the untold myriads of these pests about our homes that still are our unbidden boarders. Often we think there is just one that buzzes around to interfere with our beauty-sleep, until we can count them on the sheet. Then, also, now and again the cat gets into the sticky paper, and thus the gaiety of nations is enhanced. Then the hilarity evoked will be well worth the cost of the article, if not of the animal as well.

Aside from the use of the plebeian sticky paper, there is another commendable plan. It's very simple: With a posthole-digger, make a hole about 3 feet deep, and into this empty all the garbage and waste water as they accumulate. Over this hole set a large fly-trap. By the time such a hole is filled up and ready to be covered permanently, the trap will be full of all manner of insect pests and ready to be emptied.

Through complexity we progress to simplicity. Peering through a telescope, we have fixed our eyes on the infinitely distant, and, aided by the microscope, on the infinitely little; we have implored the reigning deities to remove from us their pestilential

visitations; we have searched the far-away horizons for disease-bearing invaders. Now, at last, we have withdrawn our gaze and our attention from the far and the mysterious, from the supernatural and the incomprehensible, and allow them to focus on the near and the obvious—we now contemplate the fly, the flea, the mosquito, the bedbug, the louse, all the noxious insect-life that pesters us. More: at last we begin to make practical headway in the prevention of disease, for we are beginning to recognize the direct transmission of causal pathogenic organisms by visible means, rather than by mysteriously wafted effluvia. Get rid of the insect pests, and we shall realize—and then only—how much of evil they have inflicted upon us, entirely aside from the annoyances they have been causing us the world over, generation after generation; abiding in the lazy conviction that they are an unavoidable visitation of an inscrutable providence.

"The loud pronunciamientos against the *Materia Medica* are the results of prejudice and ignorance."—Abraham Jacobi.

SHOULD WE STUDY THE INDIAN?

In *The Medical Council* for March and April there appears an important paper by B. A. Warren, who is in charge of the United States Government Hospital in Arizona; and he seems to have tackled the Indian problem with open eyes and a spirit of fairness that certainly is commendable.

In the realm of medicine, it is what you can do that counts. What the laity generally employs a doctor for is, what they think he knows about a thing. The successful practice of medicine, therefore, depends upon what the physician can actually do and upon the suggestive influence he can bring to bear upon his patients. In the latter respect, the Indian medicine-man excels; although as to the former he is very ignorant and can do but little. Speaking of civilizing the Indian, Doctor Warren says:

"Whether the Indian can, or should, be civilized, as the white man understands civilization, is a big question about which there may be differences of opinion. I have yet to have positive information of any full-blooded Indian occupying a prominent place in the white man's civilization. The red man, black man, brown man, yellow man, and white man are each different members of the same family, much the same as the coyote, and domestic dog are members of the

same family. Coyotes and bears both have been to some extent tamed and domesticated; but why not let them just be coyotes and bears, as nature evidently intended them to be? They seem happier, healthier, live longer, and perhaps do just as much good in their way. So it is with the Indian. He always has, generally speaking, been dirty, lazy, polygamous; and has made little or no advancement at any time, anywhere, along the lines of what we consider civilization. He is an Indian, and always will be. Why not let him fill his niche in the plan of nature?"

In this, Doctor Warren is not just. To the American Indian, we owe such plants as the potato, tomato, tobacco, and Indian-corn; and I will defy any man to mention four other plants of equal importance to humanity.

In the May number of the *Geographic Magazine* there is an amazing account of the agricultural methods employed by the Incas at a time when our ancestors decorated themselves with wood, that is worthy any man's thoughtful consideration.

The history of the Iroquois goes far to show a possibility of development on the part of the American Indian away above that of the pure-bred negro. Colonel Parker, of General Grant's staff and later at the head of the Indian Bureau, was, I believe, a full-blooded Indian. Then, again, have we not Chief Bender? Who could ask for more in the way of highest development! Even though for a time the chief's good right arm may seem to have weakened, he is not all in yet, by any means.

But, while I do not agree with Doctor Warren in all respects, I must commend his article as being a worthy effort in the right direction; that is, of studying the Indian and his racial and therapeutic peculiarities. With the Indian, as with the negro, it is not a question of opinion. What I think about the capacities of either is of very little consequence. What any other single man thinks of them is not of much more; but it is important that we should think, and that we should investigate, not with any preconceived idea, but with the sole object of ascertaining the truth.

We should dismiss from our minds the whole sad picture conjured up by Harriet Beecher Stowe, the preposterous ideal presented by Cooper, the exquisite, but utterly wrongheaded conceptions of Chateaubriand, Marmontel, and the others of Rousseau's following, and come back to a study of the negro and Indian as they are. When we have

learned to do this dispassionately, free from prejudice, we shall begin to make some progress in the profoundly interesting subject of what is best for each of them.

To observe attentively is to remember distinctly.—
Edgar Allan Poe.

OUR QUERIES DEPARTMENT:

Our Queries Department was established for the purpose of stimulating discussion of problems that may have proven too difficult for the interested physicians to solve alone and which, therefore, they have submitted to CLINICAL MEDICINE; also to cause our readers to exercise their diagnostic and therapeutic acumen.

We confess that we are not often in a position to discuss the concrete problems submitted as intelligently and as pointedly as we would wish, for the simple reason that, as a rule, the physicians seeking our aid supply only the most meager, incomplete, and vague information. Despite our constant insistence upon the highly important truism, that we must treat patients rather than diseases, we still are importuned to name "the best treatment" for pulmonary tuberculosis, for example, or exophthalmic goiter, or dyspepsia.

Again, a specimen of sputum or, worse still, of urine is sent in for examination, without the slightest clinical information accompanying it; and upon this basis alone therapeutic "very best" suggestions are expected. It goes without saying that, in the entire absence of clinical data and with only the information supplied by the laboratory findings, we can have but an exceedingly slender thread upon which to fasten any process of reasoning by which a diagnosis may be established or a course of treatment outlined. In consequence, we usually thus are forced to indulge in vague generalities, which possibly may serve the observing physician to select from our suggestions those that he finds to apply to the case he has in hand, but which also may be valueless or even misleading if they are followed blindly, because of some peculiarities in the particular case, but of which we had no knowledge and which would have caused us to modify our conclusions and our advice.

It must be taken into consideration that the urinary findings in a given disease furnish merely a clue for a possible diagnosis. Of course, we can determine from them the existence or nonexistence of kidney disease;

we can judge of its nature and severity and even some other facts about it fairly well, especially if repeated uranalyses are made in the same case. However, if no nephritis is present, the urinary findings are only of assistance in arriving at a diagnosis; they can not in themselves establish it. They may show, for instance, that metabolism is faulty, inasmuch as intermediary products of protein cleavage are present; thus indicating that foodstuffs have not been broken down completely into their elementary constituents, that intermediary products are absorbed into the circulation and tissue-fluids and are giving rise to autointoxication. Still, at best such findings are accessory and can be interpreted intelligently and serviceably only if the information which they afford is supplemented by the fullest possible presentment of the history of the particular case and of the results of a painstaking and complete physical examination. It follows, as a matter of course, that the advice which we are in a position to offer our friends is tentative and incomplete to the degree that the reports submitted by them lack in completeness.

Given the result of a sputum examination in which the general findings indicate only the existence of tuberculous irritation and in which but few tubercle-bacilli are associated with a few or many cocci of various kinds; the diagnosis naturally is one of chronic tuberculous phthisis, because the presence of tubercle-bacilli in the sputum indicates the existence of an open tuberculous lesion; but, we do not know and cannot know from the sputum examination how far the particular case has advanced or what are the individual possibilities and requirements in the patient's condition.

It must not be forgotten that the purpose of diagnosis is, to get an inventory of the patient's organic liabilities and assets; that is to say, by the examination of the patient's organs and of his secretions and discharges, we determine the nature, extent, and severity of those abnormal conditions that are present and interfere with his wellbeing. We also determine in how far the organs can accomplish their natural vital functions. Finally, we attempt to ascertain to what degree existing interference with the functioning of the vital organs can be restored by appropriate measures, and we determine how or by what means this restoration is to be accomplished; in other words, the diagnosis very naturally leads to prognosis and treatment.

If, then, the inventory of the patient's liabilities and assets is incomplete, it goes

without saying that we are not in a position to arrive at a satisfactory diagnosis and to outline as serviceable a course of treatment as we might do if we were provided with all the information that can be obtained concerning the patient in whose behalf our aid is being sought.

We are anxious and eager to be of as much assistance as possible to our friends—meaning, to all physicians and all patients. To enable us to vouchsafe you the best possible service, though, we beg of you, whenever you may have occasion to request our opinion or assistance (and we want you to call upon us without reserve), to tell us *all* that you yourself know about your patient, and to be sure that this is *everything* that you possibly can find out about him. It is only in this manner—and thus alone—that your query can be of practical and concrete value; under any other condition, our discussion of the subject must be general and its value to you limited.

Another point. When a case has been discussed by us, whether in the Query Department or only by correspondence, it will be of interest, and also of advantage, if you will keep us informed of the further course of the particular case. This, you will perceive, will enable us to round out and complete our information, it will show us to what extent our diagnosis was supported by the course and outcome of the case, and will justify the treatment which we had outlined; or, on the other hand, it may, in the future, cause us to modify our therapeutic plans for similar conditions and processes.

Manifestly, in a given case, the disease is not purely its very own, although, of course, the patient is anxious to get well as quickly as possible and is quite willing to let it go at that. The wise physician will make use of each individual case to expand and widen his clinical outlook and experience, in order in this way to become more and more fitted to recognize and to cope with the manifold and diverse disorders with which humans are afflicted. It is by close observation of individual cases in all their phases that clinicians *become*—are evolved. For, clinicians are not born; they are the result of observation and experience.

It is not so simple a matter to elaborate and plan the treatment for our correspondents as many physicians seem to think. If you want your patient to get full value for the money he spends for being cured of his disease, you manifestly must put us in possession of as much information as can be elicited. And, let us assure you, the best and more

comprehensive requests for advice very naturally always will evoke the fullest consideration on our part. That is only human. If we see that the physician has done his own part in studying his case, in finding out about it all he can, and if he has gone to the small trouble of telling us the whole and complete story, it puts us on our mettle, and we are impelled to study that case with all the aids that are obtainable from the laboratory, from the several thousand books in our library, and from earnest counsel with all the physicians on the journal's staff, as well as with professional friends.

Now, then, it is up to you. If you want the Query Department to be something really useful, do your share—and don't treat us as though the query-editor were a clairvoyant.

"It is true that the voices protesting against the assistance offered by the pharmacopeia are impetuous, aye, stentorian; but, two thousand years ago, our old friend Plutarch taught us that all hollow things are sonorous."—Abraham Jacobi.

AGAINST KAISER ALCOHOL

In the days of Gustavus Adolphus, Sweden led Europe dominantly. But, a more redoubtable antagonist than Wallenstein then appeared, for, at that time distilleries were introduced and from that day the decline of Sweden as the world-power may be dated.

When Mackenzie Wallace prepared his book on Russia, he found that the priests of the Greek Church received a percentage upon the sales of liquor to their congregations. Under these circumstances, the amount of vodka consumed was enormous. By a single flourish of his pen, the autocrat stopped the consumption of liquor by 170 millions of men. So great has been the change among the people of that empire that even the staggering expenditures of the great war are pronounced materially less than the saving to the nation from the disuse of liquor. Nor is the saving, by any means, a financial one alone. The awakening of Russia is one of the most amazing phenomena of the age.

France has stopped the sale of absinthe for the duration of the war; and even Britain, which draws a lucrative revenue from her own sins, has greatly curtailed the use of alcoholic beverages.

We, in America, have ever been differential to the currents of public opinion in Europe, and there can be no doubt but that we are being powerfully influenced by the great anti-alcohol movements of the old world. State after state wheels into the prohibition

column; and, while prohibition does, not by any means, prohibit, there can be no question but that it places limitations upon the use of intoxicants.

Of those who have most earnestly combatted alcohol in the United States, Dr. T. D. Crothers easily stands at the head. Even now, when the snows of winter are beginning to silver his locks, this remarkable man still displays the energy of earlier days. In a letter recently published in *The New York Times*, he outlines the latest plan for opposing the internal use of alcohol. This would affect the so-called moderate drinkers of this country which class he was exceedingly conservative in placing at two millions. To all of these, alcohol is an insidious and growing danger; but while every last one of them will readily admit this so far as it applies to the other fellow, he strenuously denies that he personally is among the number. Capital is becoming alarmed at the peril which moderate drinkers have brought to their interests, and more and more they are favoring total abstainers as employees. The transportation interests, where human lives are at stake, are especially earnest in securing abstainers. We quote from Doctor Crother's letter:

"To meet this want, it is purposed to establish a research-hospital. This institution will offer scientific examination, counsel, and advice. It will undertake to show what physical and psychological measures can be used to overcome the drink-impulse and prevent its recurrence. This is practically a work for the distinct purpose of giving relief and helping persons in the first stage of the drink-disease, before it has reached chronic stages.

"Conditions demand a scientific effort to study the subject on a higher plane and suggest causes and measures, prevention and cure."

Previous efforts have failed to influence the moderate and occasional drinkers, because they still believed that they had the power of control and were able to stop it any time without assistance. That this is a delusion, is well known to all who have observed or studied the matter at all. The time when the moderate drinker will seek relief or submit to intervention is, when he himself becomes conscious of his growing infirmity and of its effect upon others who are beginning to doubt his vigor and ability. That is the time when the resources of the research-hospital come in most aptly. Its occupation is, to concern itself with the

physiologic and psychologic causes that are at the bottom of the drink-evil and seeks to answer the question why men drink. Up to the present time, this has been a matter of theory and opinion. The drinker wants to recover, but cannot do so unless he knows why he drinks. "Such a hospital would be a clearing-house where men could go for counsel and advice, not for drugs or emotional appeals."

We commend in the heartiest manner this movement of Doctor Crothers. If the money that is now wasted on associations for buying flannel nighties for the Fiji Islanders or to induce the Hottentots to use hemstitched handkerchiefs instead of their shirt tails, would be devoted to some of the really great problems of humanity, some benefit might accrue.

Suppose we drop these fantastic means of squandering money on trifles and concentrate our efforts on the opposition to the greatest evil that has ever beset humanity, with possibly one exception. What we need is, a system of trench warfare, to seize every foot of ground that we possibly can cover, and then encroach upon every spot where another inch can be wrested from the enemy, until we finally push Kaiser Alcohol and his millions altogether off the face of the earth.

Success to Doctor Crothers. Long may he live to carry out his intelligent, modern method of warfare against this great evil.

Everybody believes that service creates obligation instead of paying it off. If you do anything for anybody you have to go on forever doing more and more, or you are a traitor and a brute. That is why we love the people we have never met—we have never made them the gift of a mortgage on our souls. We treat strangers with scorn and indifference, left by being polite to them we become their servants.—Saturday Evening Post.

INDEPENDENCE DAY AND ITS CELEBRATION

Many years ago, *The Journal of the American Medical Association* started a crusade against the methods of celebrating independence Day that had been in vogue since the beginning. There were good reasons underlying the demand for a reform. In 1903, 417 cases of tetanus were reported as the sequel of the Fourth of July celebration. In 1915, but one such case was reported in the United States, although by that time the reporting of cases was much more general and complete than it had been at the earlier date. Also the total number of deaths by accident on the Fourth of July fell, from 5177 in 1905, to 1165 in 1915. The reports for the present

year are not yet all in, but it is certain that the total will not exceed, if they equal, those of 1915.

Give credit where it is due, and we need not go out of our way to question the motive underlying the movement. Presumably the annual noisy outburst of patriotism offended the English ears of King George, reminding him of what to him was a very disagreeable episode in English history, or to any person born and bred under the English flag, even though particular individuals may be justly compared to the hairs on the tail of the British lion.

One of the results of the reform is, that large numbers of incipient Americans are left to grow up to add to the economic wealth of their country or possibly to die of measles, scarlet-fever, and other maladies. No good or ill happens, but that it carries with it a certain degree of compensation. The toy-pistol, driving its tetanus-breeding fragments into the hands of young Americans, undoubtedly has sent many of them to a premature grave—Americans who otherwise might have handled a rifle or a machine-gun pointed in the general direction of King George and his millions.

It must be remembered that the noise, the shouting, the firing, the fife, the drum and the day of wild liberty have had a good deal to do with arousing the sentiment of patriotism in the minds of these young citizens—and this by no means is replaced by the mature pleasure of listening to addresses or of looking at the parades.

An illustration of the way the Fourth of July and its old celebration impressed the youthful intellect occurred in the family of one of this writer's clients. The gentleman was an Englishman of good birth; he had settled in this country and here his two boys were born. One fourth of July day he came down, to find them setting off Chinese crackers, throwing torpedoes, shouting and generally whooping it up with all the zest that Young America could display. He took the boys into his study and addressed them rather sourly, "Why, James and Albert, what does this mean?"

The kids nobly responded, "Why, papa, this is the day we licked you Britishers."

The father was so overwhelmed that he retired to his study and sat there an hour considering the matter; but the native good sense which, after all, characterizes the Englishman, came to his rescue. He saw that his boys were Americans in feeling, that they had the birthright of

American citizens. They were here to stay the rest of their lives, and it was only natural that their sympathies should be with the land of their birth and that in which their future lives were to be passed. So, he justly came to the conclusion that the boys were right and he was wrong, and all was peace in that household, henceforth.

Youth is warlike. Mars rules him until the days of maturity, and especially if Venus has begun to monopolize a large portion of the young man's thoughts, before Mercury rises upon his mental horizon and experience teaches wisdom. This is not usual until the gray predominates over the color of the hair on his head.

In earlier years, the shouting, the noise, the shooting, all mean an outburst of true patriotism, that leads him to feel that every torpedo or cracker is a shot directed against his country's enemy, for his country's sake. This is where he demonstrates, unwittingly, to his own mind his willingness to fight and bleed for that country. Here is where public sentiment has been directed against the destruction of American boyhood.

How much wiser would it be if the same potent influence were directed to make amends for the loss of this development of patriotism consequent upon the reform. Military drills, with boys clad in uniform and divided into companies, according to their ages, would go far to supply the want, especially if there were plenty of noise, shouting included, as every youngster loves to make a noise.

We cannot expect to find old heads upon young shoulders. It would be unnatural, unwholesome; and, however desirable the soberer celebration might appear to the aging lover of quiet and peace, this would not be a healthy development of boyhood.

Let those who dare to object to the old-fashioned Fourth of July take this seriously to heart, adopt the suggestion herein given and add to it a picnic with ice-cream and lemonade galore, and the other things in which the heart of boys would revel; then the toy-pistol and firecracker would not be missed nearly as much as they are at present. Also, the Fourth of July would remain in the boy's memory as something to look forward to from New Year's Day, with happy anticipation, and the patriotic principle would be duly impressed upon his inner consciousness.

Young America—native and hyphenated—should be taught to love our nation's natal day.

Leading Articles

Who May and Who May Not Marry

By WILLIAM J. ROBINSON, M. D., New York City

Editor of "The Critic and Guide," and of "The American Journal of Urology and Sexology"; author of "The Treatment of Sexual Impotence and Other Sexual Disorders"; "The Treatment of Gonorrhea and Its Complications" "Never-Told Tales," etc

Introduction

IN FORMER years, nobody thought of asking a physician for permission to get married. He was not consulted in the matter at all. The parents would investigate the young man's social standing, his ability to make a living, his habits perhaps, whether he was a drinking man or not, but to ask the physician's expert advice—why, as said, nobody thought of it. And how much sorrow and unhappiness, how many tragedies the doctor could have averted, if he had been asked in time! Fortunately, in the last few years, a great change has taken place in this respect. It is now a very common occurrence for the intelligent layman and laywoman, imbued with a sense of responsibility for the welfare of their presumptive future offspring and actuated, perhaps, also by some fear of infection, to consult a physician as to the advisability of the marriage, leaving it to him to make the decision and abiding by that decision.

As a matter of fact, as often is the case, the pendulum now is in danger of swinging to the other extreme; for, a little knowledge is a dangerous thing, and the tendency of the layman is, to exaggerate matters and to take things in an absolute instead of in a relative manner. As a result, many laymen and laywomen nowadays insist upon a thorough examination of their own person and the person of their future partner, when there is nothing the matter with either. Still, this is a minor evil, and it is better to be too careful than not careful enough.

I am frequently consulted both by physicians and laymen as to the advisability or nonadvisability of a certain marriage taking place. I, therefore, thought it desirable to prepare a paper discussing the various factors, physical and mental, personal and ancestral, likely to exert an influence upon the marital partner and on the expected offspring, and to

state as briefly as possible and so far as our present state of knowledge permits, which factors may be considered eugenic, or favorable to the offspring, and dysgenic, or unfavorable to the offspring.

The questions concerning the advisability of marriage which the layman as well as the physician have most often to deal with are questions concerning venereal disease. On account of the importance of the subject, these are discussed rather in detail under the headings "Gonorrhea and Marriage" and "Syphilis and Marriage." Other factors affecting marriage, either in the eugenic or dysgenic sense, are discussed more briefly, and more or less in the order of their importance.

Marriage and Gonorrhea

For a man or a woman, who has once suffered from gonorrhea or syphilis, to enter matrimony, without having secured a competent physician's opinion, is a great responsibility. And a great responsibility rests upon the shoulders of the physician who is called upon to give such an opinion. For, a wrong decision—a wrong decision either way—that is, permission to marry when permission should not have been granted or refusal to give permission when permission should have been granted—may be responsible for much future unhappiness and much disease: disease of the mother and of the offspring. It may even be responsible for death.

There is no easy, short road to a positive opinion. It requires a thorough, painstaking examination at the hands of an experienced physician, one thoroughly familiar with all the modern tests, to tell whether it is safe for a man who once suffered from venereal disease to enter the bonds of matrimony. Sometimes one examination is not sufficient, and several examinations may be necessary;

but, the opinion of a conscientious, experienced physician may be relied upon, and, if all men and women who once suffered from venereal disease would seek for, and be guided by, such an opinion, there would be no cases of marital infection, there would be no children afflicted with gonorrheal ophthalmia, there would be no cases of hereditary syphilis.

I firmly believe that a time will come when all venereal disease will have disappeared from the face of the earth. But, until that time comes, it would be for the benefit of the race and of posterity if people had to present a certificate of freedom from transmissible venereal disease as a prerequisite to a marriage-license. Custom is often more efficient than law, and, if a premarital examination should become a universal custom (and there are indications in this direction), no law will be needed.

When May a Man Who Has Had Gonorrhea Get Married?

When may a man who once had gonorrhea be permitted to marry?

For a man who once suffered from gonorrhea to be pronounced cured and a safe candidate for marriage, the following conditions must be present:

1. There must be no discharge.
2. The urine must be perfectly clear and free from shreds.
3. The secretion from the prostate gland, as obtained by prostatic massage, and from the seminal vesicles, as obtained by "milking," or "stripping," the vesicles, must be free from pus and gonococci. To make sure, it is best to repeat such examination at three different times.
4. There must be neither stricture nor patches in the urethra.
5. What we call the complement-fixation test, which is a blood test for gonorrhea similar to the Wassermann blood-test for syphilis, must be negative.

Referring to conditions 1 and 2, it sometimes happens that the patient has a minute amount of discharge or a few shreds in the urine, and I still permit him to marry; but this is done only after the discharge and shreds have been repeatedly examined and have been found to be catarrhal in character and absolutely free from any gonococci or other germs.

It sometimes happens that a patient comes to me for an examination a few days before the date set for the wedding. I examine him and find that he is not in a safe condition to marry, and, so, advise him to delay the wed-

ding. Sometimes he follows the advice, but in some cases he is unable to do so. He claims the wedding has been arranged, the invitation-cards have been sent out, and to delay the wedding would lead to endless trouble and perhaps scandal. In such cases, I, of course, assume no responsibility; however, I do advise the man to use an antiseptic suppository or some other method that will protect the bride from infection for the time being, while he, the husband, has an opportunity to take treatment until cured. Of the many cases in which I advised this method, I do not know of one in which infection has taken place.

When May a Woman Who Once Had Gonorrhea Be Permitted to Marry?

In the case of a woman, the decision may be harder to reach than in that of a man. Of course, the urine must be clear and the urethra must be normal; however, we cannot insist that there must be no discharge. This, because practically every woman has some slight discharge; even, if not all the time, then at least immediately prior and subsequent to menstruation. Of course, the discharge must be free from gonococci and pus. Also the complement-fixation tests must be negative. But, even so, we cannot be absolutely sure, because gonococci may be hidden in the uterus or in the fallopian tubes.

Here, we have to go a good deal by the history given us. If the woman, during the course of the gonorrhea, had salpingitis, that is, an inflammation of the fallopian tubes, then we can never say positively that she is cured; all we can say, at best, is, Presumably cured. And, further, if she has no pains in the uterine appendages, either spontaneous or on examination, and, if several examinations made within a day or two following menstruation are negative, then we may assume that she is cured. It is important, though, that this examination be made on the last day of menstruation or on the first or second day following; for, there are many cases in which no pus and no gonococci will show in the intermenstrual period, but will appear those particular days, because, if the gonococci are hidden high up, they are likely to come down with the menstrual blood and portions of mucous membrane that are shed during menstruation.

At best, it is a delicate problem, so that where there was the least suspicion that the woman may harbor gonococci I have always advised (as is my custom, to be on the safe side) and directed the woman to use either

an antiseptic suppository or a mild antiseptic douche before coitus. With these precautions adopted, I have never had an accident happen.

The Question of Probable Sterility

Thus far I have considered the problem of marriage from the standpoint of infectivity. But, we know that, besides the effect on the individual, gonorrhea has also a far-reaching influence on the race; in other words, that it is prone to make the subjects—both men and women—sterile. And a candidate for marriage may, and often does, want to know whether, besides being noninfective, he or she also is capable of begetting or having children.

In the case of man, the problem is, fortunately, a very simple one. We can easily obtain a specimen of the man's semen and determine, by means of the microscope, whether it contains spermatozoa or not. If it does contain a normal number of lively, rapidly moving spermatozoa, the man is fertile, regardless of whether he ever had epididymitis or not. If the semen contains no spermatozoa or only a few deformed or lazily moving ones, then he is sterile.

In the case of woman, it is *absolutely* impossible to determine whether the gonorrhea has made her sterile or not; because there is no way of expressing an ovum from the ovary. The woman may not have had any pain or inflammation in the fallopian tubes, and, yet, there may have been sufficient inflammation to close up the orifices of the tubes. On the other hand, she may have had a severe salpingitis on *both sides and, still, be fertile*. Nor is there any way of telling whether the ovaries were so involved in the process as to become incapable of generating healthy ova, or any ova at all. In short, there is absolutely no way of telling whether a woman is sterile or fertile—we can only surmise. And our surmise in this respect is liable to be wrong just as often as right.

While just as many girls marry as do young men, still, in practice, we always shall have to examine an incomparably larger number of male than of female candidates. This is due, not only to the fact that an incomparably larger number of men suffer from venereal disease, but also because very few women will confess to their fiancés that they ever sustained antemrimonial relations and—what is still worse—were infected with venereal disease. This, of course, is owing to our double standard of morality, which looks upon as a trivial or no offense in the man

what it condemns as a heinous crime in the woman. I have known hundreds of men who confessed freely to their fiancées that they had had gonorrhea, but I have known only two girls who made a confession of the fact to their future husbands. They got married, however, and lived happily with their husbands ever after.

Marriage and Syphilis

The problem of the syphilitic differs from the problem of the exgonorrheal patient. When a gonorrheal patient is cured, so far as infectivity is concerned, and is not sterile, there is no apprehension as to the offspring. Gonorrhea is not hereditary, and the child of a gonorrheal patient does not differ from the child of a nongonorrheal person. In the case of syphilis, it is different. The patient may be safe so far as infecting the partner is concerned, but, yet, there may be danger for the offspring.

The rules for permitting a man or a woman who once had syphilis to marry, therefore, are different from these applied to the gonorrheal patient. Here are the rules:

1. I would make it an invariable rule that no syphilitic patient should marry or should be permitted to marry before *five* years have elapsed from the day of infection. But the period of time alone is not sufficient; other conditions must be met before we may give a syphilitic patient permission to marry.

2. The man or the woman must have received thorough systematic treatment for at least three years, either constantly or off and on, according to the physician's judgment.

3. For at least one year before the intended marriage, the person must have been absolutely free from any manifestations of syphilis; that is, from any eruptions on the skin, from any mucous patches, swelling in the bones, ulcerations, and so on.

4. Four Wassermann tests, taken at intervals of three months and at a time *when the patient was receiving no specific treatment* must be absolutely negative.

If these four conditions are fully met, then the patient may be permitted to marry.

It is important, however, to state that, in permitting or refusing syphilitic persons to marry, we are guided to a great extent by the fact as to whether they *expect to have children soon or not*.

In the case of a couple who are anxious to have children soon after their marriage, the conditions for our permission must be more severe than when the couple are willing or anxious to use contraceptive measures for

the first years of their married life. For, if a man is free from any skin lesions and from any mucous patches, his wife is safe from infection *as long as she does not become pregnant*. But, if she does get pregnant, she may become infected through the fetus; and, of course, the child also is liable to be syphilitic. Hence, much stricter requirements for syphilitics who expect to become parents are necessary than for those who do not.

In case both the man and the woman are or have been syphilitic, permission to marry may be granted without hesitation, as the danger of infection is absent, but permission to have children must be refused *absolutely and unequivocally*. Regardless of the time that may have elapsed from the period of infection, regardless of treatment, regardless of Wassermann tests, the danger to the child is too great if both parents have the syphilitic taint in them. A healthy child *may* be born from two syphilitic parents who have undergone energetic treatment, but we have no right to take the chance. I, at least, never wanted to, nor ever will want to, take such a responsibility.

The Danger of Locomotor Ataxia or Paresis

There is still one more point to consider in dealing with a syphilitic patient. In patients who did not receive energetic treatment from the very beginning of the disease as also in patients whose treatment was only desultory and irregular, we never can guarantee, in spite of lack of external symptoms, in spite of a negative Wassermann reaction, that some trouble may not develop later in life.

What shall we do in such cases and what particularly shall we do if, from a general examination of the patient, we carry away the impression that, while free from the danger of infection, the man is not a good risk? Under these circumstances, we must refuse all personal responsibility, leaving assumption of the responsibility to the prospective wife.

Here is a case in point. About five years ago, a man came to me for examination; he came with his fiancée. He had contracted syphilis ten years previously, received irregular treatment by mouth, off and on. For five years, he had had no symptoms of any kind. He *considered* himself cured, but wanted to know, and his fiancée wanted to know, whether he really were cured. There were no symptoms of any kind and the Wassermann test was negative. Nevertheless, I could not give him a clean bill of health. I noticed what seemed to me a slowness in

thinking and just the least bit of hesitation in his speech.

I told the girl (the man was 35, she was 32) that I could not render a definite decision in the matter, that everything might be all right, and then, again, it might not; but, that the question about children she would have to decide definitely, once for all, namely, that she was not to have any children. She was fully satisfied so far as that part was concerned; she said she herself objected to children and did not intend to have any and knew how to take care of herself. All she wanted to know was, whether she was in danger of being infected. I told her, No, but that in my opinion there was some danger of her husband developing general paresis or locomotor ataxia.

The girl had been a teacher for about twelve years, and she was so sick at heart of the work, was so anxious for a home of her own, that she decided to take the risk. And they got married. The marriage remained childless. The man developed general paresis (softening of the brain) three years later and died about a year afterward. The woman, now a widow, I understand, is not sorry for the step she took. This shows what things our social-economic conditions and our moral code will make people do.

Tuberculosis

Tuberculosis, which carries off such a large part of humanity every year, is caused by the well-known bacillus tuberculosis, discovered by Koch. The germ is generally inhaled through the respiratory tract, and most frequently settles in the lungs, giving what is known as pulmonary consumption. However, many other organs and tissues may be affected by tuberculosis.

Tuberculosis used to be considered the hereditary disease *par excellence*. Entire families were carried off by it, and, seeing a tuberculous father or mother and then tuberculous children, it was assumed that the affection had been transmitted to the children by heredity. As a matter of fact, the disease was spread by infection. In former years, little care was exercised about destroying the sputum; the patients would spit indiscriminately on the floor, and the sputum, drying up, would be mixed with the dust and inhaled. Sometimes the children crawling on the floor would ingest the infective material directly.

It is now known that tuberculosis is not a hereditary disease, that is, that the germs are not transmitted by heredity. The weak

constitution, however, which favors the development of tuberculosis, is inherited. And children of tuberculous parents, therefore, must not only be guarded against infection, but must be brought up with special care, so as to strengthen their resistance and overcome the weakened constitution which they inherited.

That a person with an active tuberculous lesion should not get married goes without saying. But, it is a good rule to follow for a tuberculous person not to marry for two or three years, until all tuberculous lesions have been declared healed by a competent physician. As a rule, a tuberculous patient is a poor provider, and that also counts in the advice against marriage. Then sexual intercourse has, as a rule, a strong influence on the development of the disease. Unfortunately the sexual appetite of tuberculous patients is not diminished, but, rather, very frequently heightened; and frequent sexual relations weaken them and hasten the progress of the disease.

As to pregnancy, that has an extremely pernicious effect on the course of tuberculosis, and no tuberculous woman should ever marry. If such a one does marry or if the disease develops after her getting married, means should be given her to prevent her from having children. During the pregnancy, the disease may not seem to be making any progress—occasionally the patient may even seem to improve—but after childbirth the disease makes very rapid strides and the patient may quickly succumb. If precautions are taken against pregnancy, then permission to indulge in sexual relations may be given, provided it is done rarely and moderately.

Heart Disease

Heart disease no longer is considered hereditary. Nevertheless, heart disease, if at all serious, is a contraindication to marriage. First, because the patient's life may be cut off at any time. Second, sexual intercourse is injurious for people having heart disease; it may aggravate the disease or even cause sudden death. Third—and this concerns the woman only—pregnancy has a *very* detrimental effect upon a diseased heart. A heart that, with proper care, might be able to do its work for years, often is suddenly snapped by the extra work put upon it by pregnancy and childbirth. Sometimes a woman with a diseased heart will keep up to the last minute of the delivery of the child and then suddenly will gasp and expire.

In the early days of my practice, I saw such a case, and I never have wanted to see another. Women suffering from heart disease of any serious character should not, under any circumstance, be permitted to become pregnant.

Cancer

No man will knowingly marry a woman, and no woman will marry a man, afflicted with cancer. However, this question often comes up in cases where the matrimonial candidates are free from cancer, but where there has been cancer in the family.

Cancer is not a hereditary disease, contrary to the opinions that have prevailed, and, if the matrimonial candidate otherwise is healthy, no hesitation need be felt on the score of heredity. The fear of hereditary transmission of the disease has caused a great deal of mischief and unnecessary anxiety to people. Scientifically conducted investigations and carefully prepared statistics have shown that many diseases formerly considered hereditary are not hereditary in the least degree.

Should it, however, be shown that in one family there were many members who died of cancer, it would indicate that there is some disease or dyscrasia in that family, and the contracting of a marriage with any member of that family would be inadvisable.

Exophthalmic Goiter (Basedow's Disease)

Exophthalmic goiter is a disease characterized by enlargement of the thyroid gland, protrusion of the eyeballs, and rapid beating of the heart. The disease is confined almost exclusively to women, and I should not advise any exophthalmic woman to marry; neither should I advise a man to marry an exophthalmic goiter woman. It is a very annoying disease, and sexual intercourse aggravates all the symptoms, particularly the palpitation of the heart. The children, if not affected by exophthalmic goiter, are liable to be very neurotic.

Simple goiter, that is, enlargement of the thyroid gland (chiefly occurring in certain high mountainous localities, such as Switzerland), is not so strongly dysgenic as is exophthalmic goiter. Still, goiter patients are not good matrimonial risks.

Obesity

Obesity, or excessive stoutness, is an undue development of fat throughout the body. That it is hereditary, that it runs in families, there is no question whatsoever. And, while

with great care as to the diet and by proper exercise obesity may, as a rule, be avoided in those predisposed, it none the less often will develop in spite of all measures taken against it. Some very obese people eat only one-half or less of what some thin people do; but, in the former, everything seems to run to fat.

Obesity must be considered a dysgenic factor. The obese are subject to heart disease, asthma, apoplexy, gallstones, gout, diabetes, constipation; they withstand pneumonia and acute infectious diseases poorly, and they are bad risks when they have to undergo major surgical operations. They also fatigue readily from physical and mental work. (As to the latter, there are remarkable exceptions. Some very obese people can turn out a great amount of work, and are almost indefatigable in their constant activity.) Each case should be considered individually, and with reference to the respective family history. If the obese person comes from a healthy, long lived family and shows no circulatory disturbances, no strong objections can be raised to him or to her. But, as a general proposition, it must be laid down that obesity is a dysgenic factor.

Arteriosclerosis

Arteriosclerosis means hardening of the arteries. All men over fifty are beginning to develop some degree of arteriosclerosis; but, if the process is very gradual, it may be considered normal and is not a danger to life; when, however, it develops rapidly and the blood pressure is of high degree, there is danger of apoplexy. Consequently, arteriosclerosis and blood pressure of high degree must be considered decided bars to marriage.

It must be borne in mind that the sexual act is, in itself, a danger to arteriosclerotics and people with high blood pressure, because it may bring about rupture of a blood-vessel. Married persons who find that they have arteriosclerosis or high blood pressure should abstain from sexual relations altogether or indulge only at rare intervals and moderately.

Gout

A consideration of gout in connection with the question of heredity will show how near-sighted people can be, how they can go on believing a certain thing for centuries without analyzing, until somebody suddenly shows them the absurdity of the thing. Gout was always considered a typical hereditary disease; for it was seen in the grandfathers, fathers, children, grandchildren, and so

along. So, certainly, it must be hereditary! It did not come to our doctors' minds to think that perhaps, after all, not heredity is to blame, but simply that the same conditions that produce gout in the ancestors likewise produce it in their descendants.

We know now that gout is caused by excessive eating, excessive drinking, lack of exercise, and faulty elimination. And, since, as a general thing, children lead the same lives as did their fathers, they are likely to develop the same diseases as their fathers did. A poor man who leads an abstemious life doesn't develop gout, and if his children lead the same abstemious lives they do not develop gout. But if they should begin to gorge and live improper lives they would be prone to develop the disease.

The disease, therefore, cannot in any way be considered hereditary. In matrimony, gout in either of the couple is not a desirable quality, but it is not a bar to marriage; and, if the candidate individually is healthy and free from gout, the fact that there was gout in the ancestry should play no role.

Mumps

Mumps is the common name for what is technically called parotitis (or parotiditis). Parotitis is an inflammation of the parotid glands. The parotid glands are situated, one on each side, immediately in front and below the external ear, and they are between one-half and one ounce in weight. They belong to the salivary glands; that is, they manufacture saliva, and each parotid gland has a duct through which it pours the saliva into the mouth. These ducts open opposite the second upper molar teeth.

We might be surprised to be told that these parotid glands can have anything to do with the sex-organs; but there is no other remote organ that bears such a close and rather mysterious relationship with the sex-glands as have the parotids. When the parotid glands, either one or both, are inflamed, the testicles or ovaries also are liable to be attacked by inflammation. The inflammation of the testicles may be so severe as to cause them to shrivel and dry up; or, even when no shrivelling, no atrophy of the testicles occurs, they may be so affected as to become incapable of producing spermatozoa. Moreover, in cases where the testicles of a mumps-patient seemingly were not attacked—that is, where the patient was not aware of any inflammation, having no pain and no other symptoms—the testicles may have become incapable of generating spermatozoa.

Besides the testicles, the prostate gland, the secretion of which is necessary to the fertility of the spermatozoa, may also become affected and atrophied.

It is, therefore, a very common thing for men who had the mumps in their childhood to be found sterile.

As to the sexual power of mumps-patients, that differs. Some patients lose their virility entirely; others remain potent, but become sterile.

The same thing happens to girls attacked by mumps. They may have a severe inflammation of the ovaries (ovaritis or oophoritis) or the inflammation may be so mild as to escape notice. In either case, the girl when grown to womanhood may find herself sterile.

A man who never had any venereal disease, but who has had mumps, should have himself examined for sterility before he gets married. As explained under the caption of "Marriage and Gonorrhea," we can, in the case of a man, easily find out whether he is fertile or sterile. But, in the case of a woman, we can not. Time, necessarily, has to answer that question. In all cases, mumps reduces the chances of fertility, and no man or woman who once had mumps should get married without informing the respective partner of the fact. There should be no concealment before marriage. When the partners to the marriage-contract know of the facts, they can then decide as to whether or not the marriage is desirable to them.

[To be concluded.]

Some Surgical Experiences

With Practical Hints

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In the following, I shall endeavor, by the history of two of my cases, to show what difficulties a physician and surgeon may encounter in his practice; also, how one may meet such obstacles. In addition, I venture to offer a few practical surgical suggestions.

The first case is that of a woman, whose condition primarily was diagnosed incorrectly and eventually became impossible to be accurately diagnosed, except, finally, by an operation. This woman, an American, 34 years of age, 5 feet 3 inches in height, was first seen by me on August 30, 1913. She gave a history of one normal pregnancy nine years ago, with no subsequent signs of another until August 15, two weeks ago, when the menstruation, due failed to occur. Three or four days later, she obtained some medicine from her family physician, which quickly induced severe uterine colic, while two days after that she was curetted, upon a diagnosis of "impending abortion."

An eye-witness of this curettage subsequently informed me that she failed to see anything removed, aside from a little blood. The woman felt quite comfortable during the week immediately succeeding this operation. At the expiration of that time, while she still was confined in bed, pain, limited to the lower right abdominal quadrant, and accompanied by nausea, again set in, being worse at night. The pain persisting and seeming to

increase in strength and extent, despite her physician's daily assurance that she soon would be all right, I was called and assumed charge of the case.

I found the patient considerably emaciated she having been unable to retain even fluids during the past week. Her temperature was 98.5° F. (under the tongue), the pulse ran 90. She was equally sensitive to pressure upon the lower left and right abdominal quadrants; there was no tympanites; the tongue was thickly coated, grayish yellow; the kidneys functioned normally. Vaginal examination disclosed an immovable uterus, apparently surrounded on all sides by inflammatory exudate, impossible of definite anatomical location, exquisitely sensitive to pressure, more especially on the right side.

What Caused the Trouble?

From the history and the present examination, one, naturally, was inclined to diagnose pelvic cellulitis or else pyosalpinx. Appendicitis was considered, but the vomiting ceased after the first day of my attention; also, the pain supervened only at night, and this was completely controlled by a hypodermic injection of $\frac{1}{4}$ grain of morphine sulphate, until the next evening. Both lower abdominal quadrants at first were apparently equally sensitive to firm pressure; although, as already stated, the nocturnal pain was localized

in the lower right, but not distinctly at McBurney's point. Vaginal douches invariably caused considerable diffuse pain and slight nausea, accordingly, they were discontinued after the first two or three days. A trained nurse was being kept in constant attendance, day and night, until the patient's final recovery.

The temperature, after the first day of my assuming charge, ranged from 99° to 100° F. in the evening, down to 98 degrees in the morning, although more usually standing at 98.5 to 99. She was excessively constipated. Enemas occasioned extreme distress, and eventual copious evacuations only aggravated that symptom for the time being; although much relief would be experienced an hour or two afterward. Great difficulty was experienced in inserting the rectal pipe, and the patient was unable to retain more than a pint of fluid. At the expiration of seven days, vomiting had entirely ceased, the patient had been taking considerable nourishment, and she felt slightly stronger, although still extremely weak. Pain still returned regularly every night, requiring, despite all efforts, a hypodermic dose of $\frac{1}{4}$ grain of morphine for its alleviation. During the last two days, the bowels had been quite loose, although not so intensely painful. The temperature ran a regular quotidian course of 98° or 99° to 99.1° or 100.1° F.

On Saturday, September 6, at 4:30 p. m., the patient was transferred to the Samaritan Hospital, and that same night I operated upon her, under ether anesthesia.

The vaginal vault, it was found, was so obliterated, anatomically, by inflammatory exudate and the os uteri immovably fixed and drawn above and behind the os pubis, that we abandoned our first intention of operating vaginally. We did, however, with considerable difficulty, succeed in passing a sound, which disclosed a normal uterine depth. Through a median abdominal incision, the intestines were revealed extensively adherent among themselves and to the uterus.

The appendix, which was stretched out to a length of five inches, was much thickened and inflamed and intimately adherent to the uterine fundus and to neighboring coils of intestines. The appendix was removed in its entirety and the utero-intestinal adhesions on the right side were dissected loose; but the adhesions of intestine to intestine were not disturbed.

The patient exhibiting signs of much shock, we were tempted to desist, at this stage; however, a hypodermic dose of lobelia

(Lloyd's subculoyd, 2 Cc.) was administered, after which we proceeded to investigate the left side, which we found entirely blocked by a large mass continuous with the uterus and adherent to the intestines posteriorly and externally. Upon finally achieving a cleavage-point of separation near the uterine wall, more than a quart of a thick tar-like fluid oozed out. This evacuation left a corresponding cavity lined with intestinal and uterine adhesions - which it was not good surgery to disturb. The cavity was mopped out with moist gauze and finally flushed out with saline solution. With some difficulty, we managed to make an opening between the floor of the cavity and the vagina. Two strips of iodoform-gauze one yard wide now were packed, by way of the cavity, one extending toward and into the vagina, and the other through the abdomen. Each strip was entirely separate and distinct from the other, of course, communicating with each other only within the walls of the cavity.

The patient, after being one and a half hours on the table, was now returned to her bed, in an extremely shocked state, with a pulse of 144, and skin clammy. The Murphy drip was immediately put in operation, but the water could not be retained. Then 5 ounces of saline solution containing 20 drops of adrenalin-solution was given per rectum, and this was partially retained, this enema being repeated every four hours for the first twenty-four. Cactoid, 1-30 grain, was given hypodermically every three hours, but reducing the dose to four times a day after the first day, and finally giving it internally. Hot-water-bags were packed around all available points of the body, and at midnight the respiration was 26, the pulse 130, skin no longer so clammy. She was nauseated only once since being returned to bed. Catheterization, twelve hours afterward, procured 7 ounces of urine.

On the day after the operation, at 2 a. m., the pulse was 132, temperature 101 degrees, respiration 28. At 8 p. m. the pulse was 116, temperature (axilla) 99.6 degrees. The bowels moved on September 8, and the patient also urinated freely and involuntarily. Convalescence was slow, being interrupted by the patient's getting out of bed too soon, and also by supervening hepatic hyperemia and general jaundice. Less than six months afterward, I met this woman at a Masonic ball and had the pleasure of "hesitating" with her. She then weighed 140 pounds and gave no appearance, objective or subjective, of having so recently "hesitated" with death,

Here is the other case. A farmer had suffered for years from "gallstone-colic." He went to Ann Arbor, where a well-known professor diagnosed the condition as such. Finally, some three years ago, he came into my hands while he was suffering from an apparently typical attack of gallstone-colic. He experienced intermittent pains of extreme severity in the region of the gall-bladder, which latter was acutely sensitive to pressure. There was slight yellowing of the conjunctiva, also, nausea and constipation, and the evacuations, when any, were slight and clay-colored.

I assured the patient that the condition very much resembled that of gallstone trouble, but that no one, no matter how experienced or clever, could so diagnose with absolute accuracy, unless gallstones had been evacuated or observed radiographically—neither of which had occurred. However, I also assured the patient that an operation certainly was indicated, as there was something radically wrong in the gall-bladder region.

At operation, an incision was made vertically downward from the ninth costal cartilage through the right semilunar line. At first the gall-bladder could not be discovered, but finally was revealed hiding itself unobtrusively high up behind the rib. The viscus was slightly below normal size, walls not thickened, free from gallstones or inspissated bile, in fact, apparently disappointingly healthy. Further manipulation eventually revealed a nipple-like constriction of the fundus of the gall-bladder. There was absolutely no other sign of adhesions or inflammation, biliary or hepatic, but simply a thin adhering band, just like a rubber constricting the fundus into a nipple-like projection to the size of $\frac{3}{4}$ of an inch. So constricted was this part that after several incisions into it the fundus still retained this nipple-like shape. Nothing more, however, was done. The abdominal incision was closed, without drainage-tube insertion, and it healed uneventfully. The patient felt so well after the third day that he continually scared his nurse by his exuberant activities. Time can vouch as to the patient's continued good health and lack of subsequent attacks of "gallstone-colic."

Practical Hints

In using a local anesthetic, whether for major or minor work, permit plenty of time to elapse before starting operative procedure. Quite a number of operators ignore this neces-

sary and comfortable factor of time, apparently relying more upon physical strength to control their struggling, remonstrating patients than upon the hurriedly administered local anesthetic.

In respiratory shock, hypodermic lobelia (Lloyd's) 3 mils (Cc.) repeated as required, is the stimulant *par excellence*. Do not, as is often done, administer strychnine. Your patient has ample time to die before it can possibly act.

In administering mercury salicyl-arsenate, iron citrate, or similar preparations, hypodermically, use a 2-mil (Cc.) Luer glass syringe with a $1\frac{1}{4}$ -inch needle, sterilizing the instrument and the patient's skin with alcohol. Insert the needle full-length into the muscle, and little or no pain will be complained of subsequent to the injection.

In removing adenoids, especially in children with high and narrow palate, the Gottstein curette, with its numerous modifications, will not be found an instrument for precisional removal. A modified Læwenberg forceps kept well sharpened and always introduced and operated along an examining and guarding forefinger, will vouchsafe the best results.

Removal of turbinates, inferior and middle, is accomplished most satisfactorily with a Jarvis snare and a modified Struycken's nasal alligator forceps; the latter being first introduced, biting out a piece of bone on the upper posterior aspect of the turbinate, so as to afford a hold for the subsequently passed snare. A 10-percent solution of cocaine in 1 : 5000 adrenalin-solution, applied for half an hour, makes nasal operations painless and bloodless.

In removing tonsils, whether you elect to use scissors, knife, snare or guillotine, it is, above all things, indispensable for quick and accurate work to have a forceps that will easily catch and retain the tonsil and which can be released from the operator's grasp without simultaneously releasing the tonsil.

As a wet dressing for wounds and infections of every description, great or small, the following is inexpensive, cooling, antiseptic, and healing; it is to be kept constantly applied on gauze:

Alcohol, (95-percent).....	1 part
Carbolic-acid solution (3-percent)...	1 part
Boric-acid solution (saturated)...	6 parts

I have found nothing better as a dusting powder for chancres and chancroids than a mixture of vegetable charcoal, 1 part, and calomel, 9 parts. The charcoal, besides acting psychologically in these cases, is deodorant and antiseptic.

Pituitrin, one half ampule given hypodermically—repeated, if necessary, though rarely required, in two hours—more often than not obviates the use of a catheter in postoperative and obstetrical retention of urine.

Always, when possible, administer to your operative cases, major and minor (though more especially major), a cathartic thirty-six hours prior to operating. In this way patients get a much needed night's rest and go to the operating-table in considerably better condition than when the cathartic, as

too often happens, is administered twelve hours or less prior to their surgical ordeal.

In conclusion, never amputate, no matter how badly disorganized a hand or foot or portion thereof may appear, until with wet dressings and time you have assured yourself—as well as the patient—that restoration cannot be accomplished. A day or two's time while possibly eventuating into amputation, quite often saves at least some tissue with concomitant bone that may prove of immeasurable benefit to their owner.

Venereal Infections of Animals and Their Effects*

By G. A. ROBERTS, D. V. M., Raleigh, North Carolina

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OUR own observations in various parts of the United States as well as the study of numerous reports issued in this country and abroad, during several years, have indicated a rapid and extensive increase in the number of abortions occurring in all classes of domestic animals—notably in horses, cattle, sheep and swine—while, moreover, these accidents by no means are rare in the human family. Nor is this all, for, with the abortions, there likewise have been many cases of retained afterbirths in cattle (owing to the peculiar anatomical arrangement of those parts), besides many more cases of sterility in every class of the animals—a fact again not uncommon among women. Also, where the abortions have been most numerous in cattle, a granular inflammation of the mucous membrane of the vulva and sometimes also of the vagina, has invariably appeared. Consequently, the fact that, where any of the troubles named exist, the others usually are present also has led investigators to look for a common cause for these phenomena.

The evidence thus far gathered points strongly to the possibility of a specific organism—the bacillus of Bang, or bacillus abortus, as the agent responsible in cattle for most abortions, both early and late, including premature births, still-births, and birth of weaklings; also for all retained afterbirths as well as for many cases of inflammation of the uterus not attended by visible signs of

retained afterbirths, besides a large percentage of sterilities, both temporary and permanent.

The part played, if any, by the pathogenic bacillus named, in the granular venereal disease, certain udder diseases, and the like, has not been determined; but, in any event, the term "contagious abortion" is very inappropriate to indicate the totality of the effects of this infection. Many animals venereally infected neither abort nor show any external evidence of infection, while, on the other hand, all of the conditions mentioned may result from it.

Formerly it was thought that the causes for abortion in domestic animals were almost as numerous as are the abortions themselves, such, for instance, as fright, falls, injuries, green or moldy feed, cottonseed-meal, purgatives, and the like; also, the so-called abortifacients (as, pituitrin, ergot, gossypium) had a like reputation, but none of these agents produce such results when desired, unless by coincidence the mouth of the uterus is opened mechanically as the result of uterine infection. In this way, some of the agents mentioned may aid in precipitating an abortion, but it is doubtful whether any one by itself is a sufficient cause.

If one will visit an abattoir or large slaughter-house and observe the number of pregnant cows killed, after witnessing the rough and excitable handling of these animals in loading, shipping, unloading, slaughtering, and the like, he can appreciate how other factors besides fright and injuries must intervene for causing abortion. Again, if

*Read before the North Carolina Academy of Science, April 28, 1916.

one will study the anatomy and physiology of the parts involved, he will note the wonderful provision nature has made for avoiding premature expulsion of the embryo or fetus from the uterus. He will, likewise, observe the difficulty in accounting for this accident on grounds other than infection or artificial opening of the mouth of the uterus. Abortions can readily be accounted for, however, by these latter factors.

The *Bacillus Abortus* the Real Cause. The Diagnosis

The *bacillus abortus* may be found in the bodies of aborted fetuses and in other infected ones, also in milk from many of the infected cows and in the abortion exudate within the uterus. Schroeder and Cotton found this organism in nearly 14 percent of 217 samples of milk sold in the Washington, (D. C.) market, and in 31 percent of samples from 35 cows in one herd.

In order that abortion will occur, however, the organism probably must enter the uterus. It may get there possibly through the circulation of the heifer infected prenatally, or from contaminated raw milk, or through the vaginal route at the time or before conception occurs. Even when lodged here, however, it may not be active enough or be specifically located so as to cause sufficient alterations near the mouth of the uterus to allow expulsion of the fetus.

The histories of many herds show as high as 50 percent or more of heifers aborting during their first pregnancy, and often 50 percent of all abortions in the herd occur during first pregnancies. In most instances, the infected cow shows a growing tolerance, so that there is less likelihood of aborting the second time, much less the third and rarely the fourth time, although they continue to be carriers of the infection. The yearly number of abortions in many herds may be quite variable. In some years, there may be no abortions or but very few; the next year, all pregnant cattle may abort as if overtaken by a storm-wave. The services of some bulls seem to be attended by more abortions than those of others, indicating a more virulent infection in some instances.

The Diagnosis of this Infection

The recognition or diagnosis of this infection in a cow or herd is, as a general thing, overlooked unless numerous abortions occur. As above indicated, however, many infected animals may never or do not always abort. This lack of evidence of infection can readily

be illustrated in other infectious diseases, as, for example, tuberculosis, especially in cattle, where the infection may exist for a long time without any clinical symptoms showing.

As yet, no satisfactory method for recognizing all infected cattle has been suggested, although often the fact can be determined by subjecting the blood-serum of suspected cattle to biological tests, the agglutination and the complement-fixation tests, for instance. If these tests are repeated at frequent intervals, most cases of venereal infection can be detected sooner or later.

Retained afterbirths are common only in cattle, because of the peculiar anatomical connections between the maternal and the fetal placentas. If abortions occur before about the fifth month of pregnancy, there will be little or no retention, because of the slight development of the villous projections on the fetal placenta. On the other hand, the longer the fetus is carried, the more developed the villi, and, with the resultant inflammatory products of the infection, the greater will be the retention.

Sterility may be owing to other causes than this infection; but investigators both in this country and abroad estimate 90 percent or more of such to be the result of venereal infection. In many herds, the losses are much greater from sterility than those resulting from abortions or retained afterbirths. The total losses to the cattle industry from this infection, are not known and are difficult or impossible to determine, but it is perhaps safe to say that the losses in dairy-herds are greater than from any other single infection.

The alterations resulting in sterility most often occur in the ovary, the uterus or vagina. In many cases of sterility, it is observed that a persistent yellow body (*corpus luteum*) exists in the ovary, which probably produces an internal secretion inhibiting egg production (ovulation). Again, many of these yellow bodies are found in a state of cystic degeneration, which frequently terminates in conspicuous cysts. Such animals nearly always are more or less continually in heat (*nymphomaniacs*) but rarely conceive. Sterility of entire males is of rare occurrence.

The mucous membrane of the uterus may be so altered as to prevent implantation upon it of the fertilized ovum or it may be dislodged and expelled at a very early period. This latter accident may not be discovered by the herdsman, and thus, the case often be taken for one of sterility rather than of abortion. As a matter of fact, supposedly sterile cows are early aborters. The mucous membrane of

the vagina may likewise be altered or at least the secretions from it, so as to destroy the vitality of the male element. There is very little sterility among the male animals but many dairy-men report that it is difficult to get full 50 percent of their cows with calf, and some report as high as 75 percent or even more.

Investigations as to Horses and Swine

A personal investigation was made the past year of 50 herds in North Carolina, numbering altogether 1700 head of cattle. They were located at twenty-five points between the mountains and the coast. The results were similar to those obtained from like investigations in other states and countries, namely: that few herds are free from venereal infection. Laboratory tests were made of 203 samples of blood from cattle. The result was, 65 percent positive, 17 percent negative, and 18 percent suspicious; making 83 percent of possible infection.

For comparison of a similar infection in the horse, the following history was obtained of the service of one stallion. During the year 1914, this horse was bred to 113 mares. Of these mares 65 became pregnant, and 6 of them were known to have aborted, and it is possible that others did also. This number makes nearly 10 percent abortions. Some foals were born dead, others lived only a short time. Of the 113 mares, 44 were served two or more times and 4 of them were bred numerous times during the summer and fall, without result.

Likewise, observations and inquiries indicate similar trouble in hogs. The following letter was recently referred to the veterinary department of the Experiment Station: "I have had trouble with my hogs for more than a year. I have changed both sexes of my stock several times. They have free range at pasture, but my sows have trouble with their pigs. Some of them abort their pigs, others give birth to dead pigs, and the pigs of others die when a few days or weeks old. Many sows I cannot get to 'catch' at all. I bought a male hog from the western part of the state some time ago and have had these troubles ever since."

Suggestions as to the Remedy

Treatment for this infection and its manifold results is far from satisfactory, still, a few valuable facts have been determined both as to the fallacy of past suggestions and as to the agencies to be employed in the future. It may safely be stated that, since the infec-

tion is so widespread and in view of the difficulty, frequently, of recognizing the infection, it will be impossible to depend on purchasing only animals free from infection. It cannot, therefore, be eradicated by simply disposing of or isolating all aborting animals. Neither can the disease be controlled or eradicated by the use of the formerly advocated specifics—carbolic acid and methylene-blue—administered as previously directed. Its control will depend largely upon a knowledge of the sources of infection and other characteristics of the disease.

In the first place, it must be borne in mind that the infection may occur in the animal before birth or else after birth through the ingestion of contaminated raw milk or, also, through service by an infected male. Again, it must be borne in mind that abortions are usually confined to the first and second pregnancies and that after aborting once or twice most of the animals do not usually do so again, which may be explained by assuming an acquired tolerance for the infection.

With our present knowledge, the control or partial control of abortions, retained afterbirths, and many of the sterilities will depend upon diligent flushings of the vagina of the female and of the sheath of the male with mild antiseptics. The one-time reputation of the once popular "yeast-culture" treatment for sterility was due probably to its antiseptic or neutralizing effect. Other agents, such as milk curdled by means of lactic-acid organism, dilution of Lugol's solution of $\frac{1}{2}$ -percent strength, and dilution of lysol of $\frac{3}{4}$ -percent strength have been recently advocated for the same purposes.

Diseases of the ovaries, however, can not be corrected through vaginal douches or by internal administration of drugs. We have, apparently, obtained some good results—and others have made like reports—from surgical measures. These may consist, where only one ovary is involved, in removing the diseased ovary or, where one or both are affected, in manipulating and massaging the affected ovary through the rectum. This manipulation may effect the forcing of a superficially located persistent corpus luteum from the ovary, or the rupture of a thin-walled cyst, or else the massaging may aid nature in making or hastening repair. If the animal remains sterile, following a reasonable number of treatments to correct the specific cause for the barrenness, then she should be disposed of for beef.

Nonoperative Gynecology

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

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EDITORIAL NOTE.—This is the third in the series of articles upon nonoperative gynecology which Professor Rittenhouse is contributing to this journal. This is a topic in which every general practitioner is interested; therefore we believe that every succeeding instalment of this series will be eagerly welcomed by every reader of this journal. Professor Rittenhouse will be glad to answer any questions, and we hope that the series may bring out many comments.

**Continued from the August issue, page 658]*

CERVICAL CYSTS AND TUMORS

THE cervical cysts and tumors which I shall here discuss do not include those which require definite surgical treatment, such as fibroids and cancers, but only those that can readily be treated in ordinary office practice.

Nabothian Cysts

In many cases of endocervicitis, the ducts of the cervical glands have a tendency to become obstructed. They then become distended with secretion, and in that condition are known as ovula of Naboth. They appear as little globular bodies on the cervix, at the margin of the os externum. In a given case, one or several may be present and they may vary in size from that of a pinhead to a marble. In color, they usually are whitish. Sometimes, when long neglected, they break down and an ulcerative condition supervenes, which may strikingly resemble cancer of the cervix uteri. I had such a case last year.

The patient in question was past 60 and had lost a sister from uterine cancer. She had observed for some time an occasional stain of blood from the vagina and had more or less backache. She had been examined by a physician, who pronounced it cancer and advised immediate hysterectomy. She consulted me for a final decision. There was no odor to the discharge, and that, in addition to the other fact that the appearance was not entirely characteristic of cancer, led me to offer her a ray of hope. I suggested that she allow me to treat her for two weeks, when I would give her a final answer. She gladly caught at the straw like the proverbial drowning man.

As there was a good deal of endocervical catarrh, I applied tincture of iron to the interior of the canal. I then applied tincture of iodine to the erosion around the os externum; also prescribed a hot boric-acid vaginal douche twice a day. I ordered her to report in four days. At her first return visit, the improvement was so marked that

I no longer feared cancer. After two-months' treatment, the cure was complete and it has remained so.

No doubt many physicians would, in such a case, consider it wiser to remove the uterus, so as to be on the safe side in case it was incipient cancer. But would that really be taking the safe side? Hysterectomy in a woman of 60 is not a trifling operation—indeed, it never is. Had it been cancer, of course, delay would have been undesirable; but, then, a delay of two weeks would have made little difference as to the prognosis and was less important than the possibility of operating upon a wrong diagnosis.

It is seldom, however, that these Nabothian cysts assume any serious importance as in the above case. Usually all that is required is, to incise them and apply tincture of iodine. If they stand out sufficiently, it is well to clip off the top with small curved scissors. Then the iodine is more likely to get inside of them and cause their obliteration. In any case, though, they frequently return.

Cervical Polypi

A polypus attached within the uterine cavity commonly requires for its removal a surgical operation under anesthesia. But, if the pedicle is attached in the cervical canal, its removal is usually so simple that it can scarcely be dignified with the name of operation.

As a rule, the diagnosis presents no difficulty. The new growth is usually pear-shaped, the narrow pedicle answering to the stem of the pear. The surface is smooth and shiny, paler than normal mucous membrane, in fact, often has a jelly-like appearance. An important diagnostic point is, that it is insensitive. The true polypus has no nerve supply.

When the attachment is high up in the cervical canal, it is not always possible to determine whether it is in the canal or in the uterine cavity. The polypus, appears, according to its size, either at the os, or protrudes into the vagina. Very large ones have been known to protrude from the vulva.

In making a diagnosis, it should be borne in mind that a uterine polypus gives rise to more symptoms than does one with a cervical attachment. There is more pain, as the uterus makes efforts at expulsion, and there is menorrhagia or metrorrhagia. A cervical polypus often produces virtually no symptoms.

In deciding upon the best method of removal of a given polypus, something depends upon its size and point of attachment. Of course, the ideal way of disposing of a polypus is, to sever its pedicle close to its base of attachment and then cauterize the base, so as to discourage a recurrence. But this procedure is not always possible. I generally employ a piano-wire snare or else a pair of long-handled, short-bladed scissors curved on the flat.

The stem of a polypus is sometimes very tough, so that cutting it off with scissors is not an easy matter. I recall one case in which I first broke a snare and then failed to sever the stem with the scissors. Finally I succeeded with the scissors, by cutting about an inch from the point of attachment, where the neoplasm was softer. This left quite a stump protruding from the os and I advised the patient to return in a week or two for completion of the operation. In the meantime, I provided myself with a stronger and sharper pair of scissors. The woman did not return, but two years later, when I happened to meet her, she informed me, in reply to my inquiry, that the thing had given her no further trouble and for that reason she had not returned for treatment. Eight years have now elapsed and her health is perfect. I have had no opportunity for examining her in that time.

This case would seem to prove that the tendency of a polypus to recur, unless its base is destroyed, is not as great as is generally believed. Other cases of mine confirm this. So, it has become my custom, when a polypus is in a difficult location, to sever it as near to the base as possible and then keep the stump under observation for some weeks or months. I find that in some instances the stump shrivels up, in others it remains stationary, while in still others it goes on growing. In the latter, I make the second removal as thorough as possible and, if the location permits it, cauterize the base. For this purpose, I prefer fuming nitric acid. Of course, this should not be attempted except in locations where the acid can be prevented from spreading to healthy tissue.

Occasionally we meet polyps that vary

more or less from the ordinary type. Two years ago, a lady who is nearing the menopause consulted me for a vaginal growth which she said had twice protruded from the vagina, though ordinarily remaining within. I found a polypoid growth as large as a small Bartlett pear, but much softer than usual and pinker in color. I set a date for its removal, but before the time came the woman sent me word that the growth had burst and was quite small. She stated that what had escaped was jelly-like, or ropy.

On examination, I found a collapsed and empty cyst attached to the cervix at the os externum. I cut it off close to its base, where it proved to be vascular enough to cause considerable hemorrhage. I still examine the woman about once in three or four months, but up to the present time there has been no return of the growth. The cervix does not look entirely normal, and I am keeping in mind the possibility of the development of a malignant growth.

One of the most decided variations from the ordinary type of polypus that I have ever seen came under my notice a few months ago and is interesting, not only because of its type, but because of its history. Indeed, I am not quite sure that I am correct in calling it a polypus, and do so only because I know of no other form of neoplasm that it so nearly resembled.

The patient is about 30 and I have known her from infancy. When she was a little girl of 7, I was called to treat her for gonorrhea. She had been infected by a boy of 15—a relative who was visiting the family. So far as appearance went, she recovered completely; but I think it is pretty generally conceded that many cases of gonorrhea in both of the sexes are not fully cured and that the infection may lie dormant for an indefinite number of years. In this case, it seems probable to me that the condition which I found in the cervix and the growth which I am about to describe had their original cause in the old infection, although this had long ago lost its gonorrheal character.

When this woman consulted me last winter, she had been married about six months, during which time she had enjoyed good health, but had not become pregnant. She stated that sexual intercourse was always followed by a flow resembling menstruation, for a day or so.

I found protruding from the cervix a little flat growth about an inch in length, half an inch in breadth and an eighth of an inch in thickness. The cervical canal was relaxed,

eroded, and catarrhal, although there was very little of the tough, glairy mucus that is so characteristic of endocervicitis. The growth was attached quite near to the os externum. It was a grayish-purple color, insensitive, and bled at the slightest touch; it resembled exactly the purplish fungus-like tissue found in some cases of scurvy and growing out from between the gums and the teeth. (I am aware that this is not a very illuminating comparison, because in our day, fortunately, there are many physicians who have never seen a case of scurvy.)

I clipped off the growth as close to the base as possible. It bled very freely and persistently, for so small a tumor, and it required

the prolonged application of cotton saturated with tincture of iron to control the hemorrhage. I made no other applications at that sitting. A week later, the woman reported having had no return of the bleeding. The stump had shriveled and I treated the cervix with tincture of iron followed by tincture of iodine. This treatment was repeated weekly for five or six times, after which the condition of the cervix was normal.

This case was new to me. I have never seen anything quite like it. I feel that such a case ought to be kept under observation for several years, if possible.

[To be continued.]

Treatment of Ivy Poisoning

By J. M. FRENCH, Milford, Massachusetts

EDITORIAL NOTE.—*Doctor French makes a novel suggestion—one which will touch the fancy of every homeopathic practitioner but may not appeal particularly to the regular; at any rate, this paper carries a therapeutic suggestion which is worth thinking over.*

MOST doctors who live in the country have to treat a good many cases of ivy poisoning during the summer months and they are fortunate if they do not suffer from it in their own persons. For myself, I have always been somewhat susceptible to it and used to suffer from it frequently in my boyhood. My most serious experience of the kind, however, was about fourteen years ago, when I was badly poisoned by *rhus venenata*, or poison-sumach, which is much more virulent than the ivy (or *rhus tox*).

One day I was riding with my wife, when I stopped to pick what seemed to be a beautiful bouquet. It was in the fall of the year and the leaves were of a bright-red color, while the berries hung in grayish-white clusters, the whole making a handsome picture. I did not at the time recognize the shrub nor suspect its poisonous nature. I picked a large bunch of the bright leaves and berries and at home put them in a vase in my front hall. It was about twenty-four hours afterward when I began to feel itching on my wrists and soon observed vesicles forming, the result of scratching. Then I began to suspect the cause of the trouble and set out to look up the nature of the berries I had picked; with the result that I learned a lesson in botany not soon to be forgotten.

The itching began on my wrists, my hands having been covered with driving-gloves, and gradually spread until a large part of my body

was affected. It also affected my general health, there being fever, headache, and general indisposition, although at no time was I confined to bed or wholly incapacitated from attending to my duties. I tried about a dozen different remedies, selecting those which were most highly vouched for and most of which I previously had prescribed for my patients, with supposedly good results. Not one of these, however, did me any appreciable good.

Perhaps it is a good thing for a doctor to have a chance to try his medicines on himself once in a while. After the first week, there was a gradual decline in the severity of the symptoms, but I did not give any credit for this to the remedies used, at least not to those which I undertook with the most confidence. The first application which gave me any noticeable relief was campho-phenique, or carbolized camphor. This had a temporary cooling effect, but the odor was unpleasant and the action on the skin seemed to me, on the whole, unfavorable. By this time, I had come to the conclusion that no specific remedy could have any effect at this stage of the trouble, but that I must rely wholly on general principles. Ointments did no good, though at a later stage they might have been beneficial.

At about this time, I tried the following lotion, from which I got marked, though only temporary relief: Zinc oxide, $\frac{1}{2}$ ounce;

glycerin, 2 drams; carbolic acid, $\frac{1}{2}$ dram; limewater, 8 ounces. By applying this (after shaking) with a soft cloth or wad of cotton and leaving the powder to dry on, I got an hour or two of perfect relief. One other application gave me even more prompt and complete relief than this, and that was, hot saleratus water. In order to get the benefit of the latter, the parts must be immersed in the solution for a minute or more, and the water must be as hot as can be borne. The immediate effect was, to intensely increase the itching while the parts are immersed, but this was followed by several hours of perfect relief.

This experience led me to believe that no application is capable of antidoting the effect of the poison of the rhus, after once it had been absorbed into the skin and produced its effect. There remained the undoubted fact, that if properly treated when the volatile oil constituting the poison first comes in contact with the skin, this oil may be dissolved or antidoted and removed.

The Prophylactic Cleanoff Treatment

In the July, 1916, number of *The Healthy Home*, a popular health-journal published in Athol, Massachusetts, I gave a description of the method which seemed to me the best for this purpose. This is substantially as follows:

As soon as possible after you know you have handled or touched poison-ivy, you should do these three things:

1. Wet the affected parts well with alcohol, by rubbing them gently with absorbent cotton soaked in alcohol. The object of this is, to dissolve the volatile oil from the rhus, which conveys the poison.

2. Scrub the parts thoroughly with strong soapsuds, using a stiff bristle-brush and plenty of water. In this way, you will wash out and get rid of every portion of the noxious oil, or very nearly all of it.

3. Soak the parts for several minutes in a 2-percent solution of potassium permanganate. This is for the purpose of antidoting any portion of the oil which may still remain on or in the skin.

By doing these three things, the poisonous symptoms will be either prevented or aborted.

I thought this was a pretty safe remedy. But in the next number of *The Healthy Home* (Aug., 1916), there appeared a reply to my recommendation, from a good friend of mine (a homeopathic practitioner who once was my neighbor, but now dates his letter at Lewiston, Me.), in which he counters with the following:

"Some thirteen years ago, there lived almost directly across the street from Doctor French a man who was foreman of the construction-gang of the Milford and Uxbridge Street Railway Company. This force consisted of about 150 Italians. Every summer, he told the writer, the efficiency of his force was seriously impaired by an average of at least 10 or 15 men being off duty daily as a result of ivy poisoning. Every man of them feared the ivy as he would an evil spirit. He was told that he need have no more trouble from this source.

" 'How can I avoid it?' he asked.

"The answer was, 'Teach them to eat it.'

"The specific instructions were as follows: When you go where you see the ivy growing, look for a tiny young leaf; pick it and eat it; then go about your business and forget it.

"Some two years later, the foreman of this gang of workmen was asked one summer's day, 'How many men are off duty today as a result of ivy poisoning?' His answer was, 'Not one.'

" 'How do you avoid it?' he was asked. 'Every mother's son of them eats it,' he replied. The writer has asked him the same question at intervals of two or three years, receiving the same reply, the last time being about two years ago."

Being a good deal interested in this subject and having a high regard for my homeopathic brother, I thought this was worth following up. And, so, this very afternoon on which I am writing this, while traveling on the Milford and Uxbridge Street Railway and chancing to meet thereon the foreman above spoken of, I engaged him in conversation, told him of the two papers referred to and asked him for his version of the matter.

Without any hesitation, the man gave me a substantial confirmation of the statements of Doctor Coffin, the physician whom I have quoted. In somewhat more detail, he told me how he himself had followed the doctor's directions when suffering from the effects of the poison, and thus had experienced prompt and lasting relief. He took but one of the three leaflets of the rhus, chewed it up and swallowed the juice. It cured him. His men followed suit, with the same result. One man was a doubting Thomas, and it was hard to persuade him to eat the leaves — but he did and was cured.

Now, brothers of THE CLINIC, here is something to think of. This foreman was no homeopathist, and had never even employed a homeopathic physician until he met Doctor Coffin, and probably never has since. He

is simply a construction-foreman, a rough-and-ready sort of a fellow, but with plenty of intelligence and common sense, not at all a good subject for hypnotism or Christian Science. And he confirms what my homeopathic friend has said, that eating a leaflet of green poison-ivy will save one from being poisoned by handling it, and also will cure the symptoms after they have been developed. What say you, brother doctors? Don't sneer at it as the impractical vision of a theorist. Try it! Then report what you have observed.

[A few years ago we should have thought

Doctor French's suggestion for ivy poisoning an example of "blatant homeopathy." Now, we turn to our studies of artificial immunity and try to explain the phenomenon that he describes. We know that bacterial diseases are cured by injections of killed bacteria causing them; and we know that hay fever resulting from poisoning with the pollen of certain plants is cured by injection of extracts of these pollens. Why is it not just as rational to believe that the poison-ivy disease may be cured by taking poison-ivy leaf internally? Doctor Duncan asserts similar results from his autotherapy. We put it up to our readers as a good subject for research.—ED.]

Autumnal Fevers

By WILLIAM F. WAUGH, A. M., M. D., Chicago and Muskegon

PRESENT indications point to an unusual prevalence of typhoid fever during the fall season. All over the country there are reported outbreaks of this malady, even as early as in July; thus indicating a wide dissemination of the cause as also of its exceptional virulence. At the time of writing Memphis has a visitation so serious that every cautious practitioner is employing the prophylactic serum in his own family as well as in his practice. Inasmuch as the water supplied in that city unquestionably is safe, this outbreak forcibly directs attention to that other most likely source of infection—the typhoid-fly. Moral: The serum and the swatter ought to save many a valuable life if utilized without stint.

However, desirable as it may be to exterminate the flies, this is but a paltry expedient at best. What is one fly out of hundreds or a hundred out of millions or a million out of the innumerable swarms that rest over the earth like a blanket and simply gravitate into any vacuum—of fly life—that may happen to occur in such insignificant spots as a city? We must have better methods, methods that act continuously and automatically to dispose of the locally produced insects and the immigrants that flock into places fortuitously vacated by them.

Cleaning Up the Summer-Home

The measures I have instituted at my summer-home, at Idylwilde Pines (Michigan), have proved eminently effective. We there have installed the Lumsden toilets, and these perfectly protect the soil and, consequently,

the well-water, while neither fly nor mosquito can secure access to the sewage. At the end of the season, the tanks are emptied and the contents buried at safe places. The entire cost of the Lumsden sewerage system being within the purchase power of a ten-dollar bill, the trifling cost of operation (a cupful of kerosene once a week and \$3.00 for the annual emptying reduced by the contents being utilizable for fertilizing), the total absence of odor, besides the possibility of locating the privy in convenient proximity to the dwelling, all these features make this the ideal system for summer-homes, farms, and any detached residences where sewer connections are not available. Several years' experience has confirmed my choice of this excellent contrivance. Incidentally, the Illinois State Board of Health has published a description of it, a copy of which, I presume, can be obtained on application.

Garbage Disposal

The disposal of garbage and wash- and dish-water is almost as important as that of excrementitious matter; for these things attract flies and furnish breeding-places for them. I have also solved this problem. With a post-hole-digger, a few holes are sunk three or four feet deep, into the sandy soil, and into these cells polluted water and garbage are poured. Over the hole, a large flytrap is placed, the kind that costs about a dollar. The flies are attracted by the garbage and caught in the trap.

I installed this system during the winter, and the early fly entered into my little scheme

most readily. I had observed in the fall that as each of the neighboring cottages was closed, there was a considerable accession to the colony of flies at mine; proving that these pests readily migrate over the short distances between the residences of their involuntary hosts.

Large numbers of flies were caught in my trap, and, as a matter of fact, very few have been seen this summer at any of the cottages of the camp. With a similar outfit installed at every house, I firmly believe that the fly-nuisance may be suppressed completely.

Another thing: As each hole is completely filled up, a shovelful of soil is thrown in to cover the contents. The open pits formerly used, in which the garbage festered in the sun, are now utilized solely for disposing of empty tin cans, which are arranged upright and filled with dry sand.

So far good—but we can not stop here. I firmly believe the medical profession is responsible—indeed, criminally so—for every case of typhoid fever. The germs of the disease are transmitted solely through the patients' discharges; and if these were adequately disinfected in every case of typhoid fever there would be an end to the malady within a brief period. And this so very easy!

Just have the person attending the typhoid-patient receive every discharge of feces and urine into a vessel containing freshly made whitewash and let this stand for at least an hour before it is emptied. Every typhoid-germ will have perished in that time, when the stuff may safely be deposited in the cess-pool—or in the family-well, if preferred. The sputa should be similarly treated. In addition, it may be that benefit accrues from impregnating the air of the sick-room with the fumes of formaldehyde, eucalyptus or chlorine, but the best disinfectant is the free access of fresh air and sunlight.

Alimentary Disinfection

This is not enough—we must disinfect the patient's alimentary canal, destroy the typhoid germs before they are evacuated. Unfortunately (?) I have nothing new to offer about this phase—for more than a third of a century the sulphocarbolate of zinc, following complete evacuation of the bowels, has given me such entire satisfaction that I have not felt justified in experimenting with other germicides and antiseptics. If many a case of typhoid-fever, in its early stage, has not been aborted by this means, then all clinical observation and evidence is, indeed,

fallacious and the art of diagnosis may be relegated to the scrapheap, in common with alchemy and astrology, and like discarded notions.

Most striking are the results of this line of treatment in the paratyphoid group. In not a solitary case have I ever witnessed a relapse when I was using the "cleanout and cleanup" method—giving calomel and podophyllotoxin, saline laxatives, and the sulphocarbolate in efficient dosage.

It may be that there are other intestinal antiseptics, more germicidal and no less innocuous, but if so, they have yet to pass through the test of many years' use by many thousands of practitioners.

Now as to Malaria

Rarely, if ever, can we justly claim that the last word has been said about any medical question; and there are some as yet unresolved nebulae in the firmament of the autumnal malarías.

The discovery that infected man is the source from which the female mosquito derives her store of plasmodia is of cardinal importance. If Bass's suggestion, to test all the inhabitants of malarial districts and treat them during the period of the dormancy, should be carried out effectively, this malady also could be eradicated. But, when the medical profession has not even yet risen to the plane of exterminating typhoid fever, as indicated, how can we expect entire communities, embracing large proportions of illiterates, negroes as well as whites, native and immigrant, to reach such a height of universal comprehension?

In the meantime, I should like to know what explanation may be proffered of the remarkable improvement following the application of this same "cleanout and cleanup" method in malarial affections. Is the alimentary canal a breeding-place for the plasmodia also? I believe that this will ultimately be found to be so. At any rate, try this as a routine of treatment in all but the algid forms:

Calomel and podophyllotoxin, a sufficiency, followed by laxative salines; then zinc sulphocarbolate up to 40 grains daily. Meanwhile give 1 grain each of quinine arsenate and of berberine every day for three weeks or longer. The 1 grain of arsenate is fully equal to a Gram of the sulphate of quinine. Berberine causes contraction of the spleen; and forces the plasmodia out into the blood current, where the germicide may get at the invaders.

Theorem: That 3 grains a day of calx sulphurata (U. S. P.) will saturate the taker so fully that neither mosquito nor other insect will attack him; and, that, thus protected, anybody may move about in malarial districts by night and day, without incurring the danger of an attack of the disease. I do not especially care for argument—have had enough of that—but, if any clinician can supply facts from his own experience favoring or antagonizing this assertion, I shall receive them with gratitude.

The history of therapeutics is a sea littered with the wrecks of really good remedies, each half tried, then deserted for newer ones suggested. Many a brilliant gem has thus

been lost to humanity. Even when positive testimony has been adduced against a method or a remedy, it is usually buried in some technical periodical that never gets to the clinician who needs the information. For this reason we are bewildered by a multiplicity of remedies, out of which we must choose doubtfully, when a careful testing would have eliminated all but the really good and rendered our choice something akin, in certainty, to that of the surgeon selecting his instruments. Not until we can secure surgical certainty in our adaptation of means to our ends, shall we see therapeutics rescued from its present lowly position, which is entirely unmerited.

The Chemistry and Therapeutics of Nuclein*

By WILLIAM SANDERS, M. D., Louisville, Kentucky

THERE is, in our materia medica, a great number of neglected remedies which, if employed in properly selected cases, would yield wonderful results. The virtues of many a drug remain unknown for years, until some medical bellwether leads the procession; then it is heralded around the world. Witness the iodine-craze among our surgical friends. Iodine was discovered in 1812, and less than five or six years ago any suggestion as to its use as a local antiseptic would have been met with derision. It took one hundred years to popularize it.

Nuclein is a remedy that could, and should, be used more widely; therefore, it may not be time wasted for us to spend a few minutes in its consideration.

By nuclein is meant that constituent of the cell by virtue of which this histologic unit grows, develops, and reproduces itself. Chemically, the nucleins are complex substances resembling compound proteids. They are arranged, according to the products of decomposition of nucleoproteids, into three divisions; namely:

1. Cell-nucleins, or true nucleins, yielding a proteid, orthophosphoric acid, and xanthine bases. Nucleoproteids, containing true nucleins, occur chiefly in the nuclei of the cell, but are found also in the protoplasm and may pass into the animal-fluids when the cell is destroyed.

2. Pseudonucleins, yielding a proteid and orthophosphoric acid, but no xanthine bases.

They are widely diffused in animals and vegetables, occurring in the solid tissues and in the fluids of the organism.

3. Nucleinic acid, yielding orthophosphoric acid and xanthine bases, but no proteid.

Thus, it may be noted that the nucleins are complex proteid bodies notable for the large amount of phosphorus they contain.

Nuclein is a component of various portions of the animal economy. For instance, the liver, spleen, salivary glands, lungs, testes, semen, ovaries, spermatozoa, brain, spinal cord and other nervous tissues, thymus gland, and thyroid gland have been examined chemically, with the result that nuclein has been found to be the most important proteid substance present in them. Wherever nature provides for the elimination of poison or waste products of any description, there we find nuclein present both in the secretions and in the tissues. In our present state of knowledge of the structure of the white and red blood-corpuscles and the lymph-corpuscles, we are justified in stating that their most important constituent is nuclein.

Nuclein Increases the Blood's Defensive Power

Nuclein is administered to increase the defensive power of the blood against infection; and it was the epoch-making theory of Metchnikoff—that the leukocytes (or phagocytes, as he called them) are natural defenders of the body's health, having the power to meet and repel an invading bacterial army—that first led to its use.

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In nearly all of the infectious diseases, except typhoid fever, influenza, and measles, there occurs a marked increase in the number of leukocytes. Metchnikoff regarded the multiplying cells as the "army of defense." If the integrity of this "army" could be maintained, the invasion might be repulsed; if it fails, as often happens in severe cases of pneumonia, the day is lost.

Doctor Vaughan, of Ann Arbor, was one of the first to suggest the use of nuclein for utilizing this great fact therapeutically. Since "the polynuclear white blood-corpuscles are active agents in preventing or retarding the multiplication of pathogenic germs in the body," it is rational therapy to give a medicine that will increase these substances. "This increase in the polynuclear corpuscles," said Vaughan, "may be induced by introducing into the animal the most destructive constituent of these cells, which is nuclein."

Nuclein as a Constitutional Germicide

Therefore, it is a reasonable deduction that nuclein should prove of value in treating conditions where it is desired to increase the germicidal properties of the blood, and this includes practically all of the infectious diseases and local infections, and applies to the prevention of disease as well as to its cure.

Although nuclein is given to produce an increase of the number of leukocytes, there is some evidence that it raises the opsonic index. The leukocytes destroy germs by virtue of some constituent or secretion, to which is due the germicidal properties of the blood-serum. It is possible that their secretion is the substance called opsonin. If so, the more leukocytes, the higher the opsonic index. Two observers, Chantemesse and Nilhit, did find that in a case of intestinal perforation the opsonic index, normally 1.6, rose to 2.5 within twenty-four hours after the injection of nuclein. My own experience leads me to believe that its use enhances the value of vaccines.

"I have given nuclein in all cases of infection of whatever character for the past ten years and I am now more than ever satisfied with my results.

Cohen, in his "System of Physiologic Therapeutics," has this to say of it: "Nuclein has been found to be a stimulant of all animal cells. Given by the mouth or hypodermically, it causes a marked leukocytosis in a few hours, principally affecting the active phagocytes. If in acute infections protective leukocytosis is not sufficiently pronounced, nuclein is of considerable value. It is indicated in such

bacterial diseases as diphtheria, scarlet-fever, pneumonia, and septicemia. Nuclein has been strongly recommended in tuberculosis, and, in cases of streptococcus infection, it would seem good treatment to increase the fighting-power of the leukocytes. The value of nuclein as a carrier of phosphorus should cause it to be utilized in cases of nervous debility, depression, and degeneration."

Manner of Prescribing Nuclein

Nuclein is marketed in tablet form and in solution, either as nucleinic acid or as sodium nucleinate, according to the firm manufacturing it. It is a white amorphous powder, soluble in water and insoluble in alcohol. It may be administered by the stomach, dissolved on [or under] the tongue, subcutaneously or intravenously. The stomach-route is the least effective. However, when so given, it should be administered frequently in large doses and when the stomach is empty. It should not be taken within an hour after eating.

The buccal route has given better results in the hands of many and is to be preferred when the subcutaneous or intravenous methods are rejected. The dose depends upon the patient's age and weight, the character of the infection and frequency of administration, and it ranges between 2 and 60 minims. In acute conditions, 2 to 10 minims may be dropped on the tongue every hour; in chronic cases, the dose is from 10 to 60 minims two to four times daily. The tablets, which represent 2, 5, and 20 minims of the solution, will be found very convenient.

The hypodermic method is employed where a marked physiological action is desired. The dose is from 10 to 30 minims. Intravenously, nuclein is given diluted with physiological salt-solution, in doses of 30 to 60 minims—employing the ordinary technic for such work.

Illustrations from Practice

I will briefly mention three surgical cases in which I feel sure nuclein gave some very good results.

Case 1. A man of 32 years was operated upon for hemorrhoids on March 13, 1913. Six days later, he came to my office, complaining of the odor from a colon-bacillus infection. He was given the 5-minim nuclein-tablets, one to be dissolved on his tongue every three hours. In forty-eight hours, the odor had disappeared and a slimy, unhealthy appearing wound had changed to one with a clean granulating surface.

Case 2. A man of 35 years had the typical symptoms of appendicitis and an operation was performed by Doctor Farmer on July 2, 1913—about sixty hours after the onset of the attack. The appendix was found to be gangrenous. There was no mesoappendix, except on the distal third; it was bound down to the bowel, so that it was necessary to split the peritoneal covering and dissect it out; it was so friable that, with scarcely any traction being exerted, it ruptured and the contents escaped into the peritoneal cavity on the outer side of the cecum. This fluid was carefully sponged out and the opening closed, with free drainage instituted. The patient was given from 15 to 30 minims of nuclein-solution, on his tongue, every three hours. In thirty-six hours, his temperature was normal, and in a few days he remarked that since they had been putting that stuff on his tongue he was feeling ever so much better and stronger. He left the hospital on the 21st, with the wound so nearly healed that it required only two more dressings. He was also given one mil (Cc.) of Van Cott's vaccine several days after the operation, for the relief of a troublesome cough.

Case 3. A girl, aged 12, had a latent sinus infection complicating mastoiditis, further complicated by arthritis in the angle-joint from an infected thrombus. Ligation of the internal jugular vein was done by Dr. John R. Wathen, and a radical mastoid operation

and opening of the lateral sinus performed by Dr. G. C. Hall. I had the girl under observation for about one week before the operation, during which time she received the 5-minim nuclein-tablets, one dissolved on the tongue every three hours; besides receiving one dose of Van Cott's vaccine. After the operation, she received 15 minims of the solution dropped on the tongue with a medicine-dropper, and in a short time (not over three or four days) her temperature, which had, at times, been as high as 105 degrees after the chills, had dropped to normal and the arthritis had disappeared. She made a very quick recovery.

I could, if time permitted, cite a great number of cases, not surgical, in which nuclein has been employed. They would cover the whole field of infections, general and local, and including all ages and conditions.

There is one fact that cannot be disputed. Nuclein will do no harm. There will be no bad effects, no matter how large the dosage—except, perhaps, that in some patients, if given over a length of time, some gouty pains from the increase of uric acid may set in. In such event, give alkaline diuretics and, if necessary, diminish the dosage of the nuclein.

Nuclein is a nonpoisonous germicide, which, if given persistently, often would change the course of many a desperate case to a favorable termination.

The Modern Method of Treating Typhoid Fever

By GEORGE H. CANDLER, M. D., Chicago, Illinois

Author of "Everyday Diseases of Children"

MY ONLY excuse for presenting a paper upon this subject is that a certain proportion of the profession, especially men practicing in remote districts, seem to have failed to realize fully the extraordinary efficacy of bacterin therapy. Nearly twenty years ago the use of the sulphocarbolates as intestinal antiseptics was urged and the possibility of aborting the disease process pointed out.

As time passed, first scores, then hundreds, and finally thousands of doctors throughout the country tried this remedial agent and found it uniformly effective. From that time, to many men typhoid fever ceased to assume a fearsome aspect, and patients seen early were prone to recover so rapidly that

unbelievers (and there were many!) had some seeming basis for their oft-advanced argument of "mistaken diagnosis." Yet, in their own practice, patients presenting precisely the same symptoms traveled with unfailing regularity the long typhoidal road which ends in death or at best in a tedious convalescence followed often by years of semiinvalidism.

Almost against their will, and despite the adverse opinions of laboratory investigators, who thought it quite impossible to affect the bacillus typhosus inimically, even with massive doses of intestinal antiseptics, some of these practitioners began administering the sulphocarbolates, and, strangely enough, immediately began to make "mistakes in diagnosis," or, in truer phrase, to obtain

definite remedial results in cases resembling those that proved resistant to treatment in former days.

It has been my pleasure to receive many letters from physicians in which they frankly acknowledged their early blindness and spoke in glowing terms of the certainty and celerity with which they were now able to treat typhoid fever. As one man expressed it, "I used to have twelve to twenty cases of typhoid fever each year and, I am sorry to say, lost a very large percentage of these patients. Even those who recovered ran the usual course and caused me unceasing anxiety. Not a few of them, moreover, presented distressing sequels. Today my people realize that if I am given even half a chance I can either cut short the disorder or so mitigate its severity as to render the illness a minor affliction."

Considering that such results are generally known to physicians throughout the civilized world, it is almost impossible to comprehend the mental processes of those men who still refuse to regard the sulphocarbolates as of value or typhoid fever as anything but a "self-limited" disease. Less difficult perhaps is it to excuse the practitioner who declines to use bacterins because he has little or no difficulty in controlling typhoid fever by the intelligent use of eliminants and intestinal antiseptics. Still, if he will seriously consider his obligation to give his patients the very best service he can render, he must acknowledge that failure to employ biologics is reprehensible, not alone because their curative action has been proven beyond any possible argument, but because a very tangible danger to others is removed or reduced to the vanishing point thereby.

A Hypothetical Case

For the purpose of illustration let us assume that a case of suspected typhoid fever occurs in a small community. The patient has not been away from home, but the family (or some near neighbor) has entertained an outsider who may have the disease or be an unsuspected carrier. It is quite possible, of course, that under proper internal medication the full clinical picture may fail to develop, *but* the appearance of other cases (even though every ordinary precaution be taken) could not, under the circumstances, prove surprising. Some of these may not receive immediate or even proper attention, and, so, later they are likely to assume a serious aspect.

Just such circumstances have only too often resulted in a "run of typhoid." If,

upon the first appearance of suspicious symptoms, the patient had received 1-2 to 1 mil (Cc.) of a typhoid bacterin (100,000,000 to 200,000,000 killed bacteria), and every known exposed person the typhoid prophylactic bacterin, the situation would in all probability have been brought under perfect control.

Moreover, the condition of the patient following the initial injection is of decided diagnostic value. If he has typhoid fever there is nearly always a sharp rise of temperature within twelve to sixteen hours; this gradually subsides and a low reading is obtained night and morning for two or three days. Then there will probably be another rise, and a second injection of at least 100,000,000 killed bacteria will be necessary. If the patient has also received proper eliminative and antiseptic treatment, the clinical picture will become more satisfactory, and after a third (rarely a fourth) dose of the bacterin the temperature will usually remain normal, and rapid recovery will follow.

The appearance of individuals so treated speaks volumes for the efficiency of this plan. Moreover, under anything like favorable conditions complications and sequels need not be feared. In numberless instances two injections have proved sufficient to stay the infection.

The Prophylactic Injections

Exposed individuals—or those likely to be exposed—usually receive three doses of the typhoid prophylactic bacterin. The first dose contains 500,000,000 killed bacteria and the second and third, given at ten-day intervals, 1,000,000,000. If the dose is given late in the afternoon, reaction will occur during the night and not incapacitate or even inconvenience the recipient.

The injections cause more or less local smarting, which disappears within half an hour. Four to six hours later there will be some headache and a feeling of lassitude or even distinct malaise. These symptoms may persist for a few hours, but usually are so slight as not to interfere materially with the patient's rest. There will also be a distinct local reaction, i. e., erythema and edema about the site of puncture. Further than this the whole procedure is innocuous.

The fact that in army camps and even in the trenches of the European battlefields typhoid fever no longer reaps a harvest more abundant than that even of the guns is proof enough that immunization by the use of bacterins is virtually a certainty. The protection thus afforded lasts for two years.

Under the circumstances it has become the plain duty of every physician not only to immunize every individual exposed to infection, but so to protect those leaving hygienic homes for cities, towns or, particularly, summer camps and lakeside resorts. Especial activity along these lines is called for, should a single case of typhoid fever occur in any neighborhood.

As every doctor with a few years' experience knows, it is not always an easy matter to diagnose typhoid fever early. By the time the symptoms become unmistakable, and a positive Widal can be obtained, such serious lesions have occurred that the most active treatment may serve but to hold the unfortunate back from the grave. Sometimes it fails even to do that. Therefore, where the symptoms at all suggest the presence of typhoid fever, it is the correct thing to institute the full treatment and thus avert possibly serious trouble.

An Outline of Treatment

Occasionally, without perceptible reason, failure will occur, for, as long as we have to deal with present conditions of living, a certain number of individuals must succumb each year to this disease. However, the roster will always be shortest in communities served by physicians who use both reliable biologics and really active intestinal antiseptics.

During the past three years the value of the bacillus bulgaricus in typhoid fever has also been proven very definitely. After the intestine has been thoroughly cleansed of gross debris, preferably by the administration of *small* doses of calomel and podophyllin,

with bilein, followed by a full dose of a laxative saline, the sulphocarbolates should be pushed in full dosage for three days at least. The writer rarely gives less than ten and sometimes twenty grains every three hours, always with a draught of boiled or distilled water. When constipation exists, the sulphocarbolates of calcium and sodium should be employed alone. I have found, however, that this troublesome condition can be controlled absolutely by the use of any good preparation of petrolatum, and only now begin to realize what a solid foundation for his belief an old doctor of my acquaintance had when he stated that all his typhoid-fever patients recovered in three weeks on calomel, creosote and "vaseline."

As soon as the discharges become inodorous the sulphocarbolates should be stopped and a virile preparation of the Bulgarian bacillus administered at least three times daily. The sooner a strong colony of this friendly germ is established, the better for the patient.

The body must be kept therapeutically clean and frequent sponging with a cool magnesium-sulphate solution will often render the use of antipyretics unnecessary. It should be borne in mind that the rise of temperature, which follows the administration of bacterins, does not call for the use of such drugs; also, that pasteurized milk and properly prepared buttermilk may be given with advantage to patients receiving the Bulgarian bacillus. Tympanites very rarely occurs under such circumstances. Earlier, milk should not be allowed. Albumen water, barley water, clam bouillon, and thin cereal gruels are the safest nutrients.

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichualco, Mexico

[Continued from page 673, August issue.]

CONSUMPTION AND PNEUMONIA

BUT today there are several manufacturing chemists in the world whose guarantee of a substance justifies testing it; for, they have had it tested crucially ere they made it and offered it to the profession. A few such, from whom I buy some extra specialty occasionally, send me quite a lot of something new of extraordinary pretensions, and tell me to pay for it when I find it

up to their representation; and this it nearly always is, save quite a number of antitoxins, that I could not possibly prove, because the infection is not here to combat, or so rarely that the antitoxins cannot be introduced.

There is here very little consumption, none hereditary nor from contagion, so far as I have been able to learn. I presume this favorable feature is attributable to the fact that the people live practically out of doors, in addition to their cane walls to houses that the wind passes through in every direction

leaf roofs, dirt floors, no ceiling, and no fire—about as nearly out in the open of nature as it were possible to get, with any pretension to having a house.

From the vague histories obtainable, such old cases as I have met usually developed from chronic catarrh or pneumonia. I have seen cases from pneumonia that supervened before convalescence, proving violently fatal, known, I believe (without reference to authority), as "galloping consumption." I think it was during the civil war that I frequently heard such a diagnosis.

My observations of consumption here seem to bear evidence in favor of the grand open-air crusade against the "white plague" in North America and other countries, where the disease abounds in deadly persistence. That it is virulently infectious, seems to be beyond dispute; also that it requires favorable conditions to propagate itself in new victims; and the fact that families of ten to a dozen children are raised down here in one-roomed huts from infancy to adult states, again seems to prove that the disease cannot thrive in the open in this unhealthy climate, outside of the victim in which it originated from catarrh and pneumonia, and not from contagion, so far as any proof I can find indicates.

I put some little stress on this feature of my observations, because it seems analogous to principles under development in the United States and elsewhere. Were the houses tight and artificially warmed here, there is little room for doubt that families growing up in the same small room with putrid consumption could not all escape infection. But it must be remembered that the victims of consumption here find modifying influence in the conditions that have been indicated, suffering less acute distress and living much longer than they do in other climates and under conditions favorable to its development.

In my years of practice, I have picked up several things from virgin nature that are possessed of a high degree of medicinal value; which, properly used, are a great aid in improved medication. To some extent, these substances are known to the American fraternity and prescribed more or less. I refer to the tropical and semitropical fruits, lemon, orange, banana, and papaya.

Lemons as Valuable Remedial Agents

Lemons are possibly of more intrinsic value than any single drug in our materia medica; that is, if salvarsan should fail to

make good to the limit of its pretensions. With lemon-juice and strong black coffee I have cured many cases of fever, in times of revolution, when no medicines were obtainable after the rebels had seized the stock on hand. This number of patients included many soldiers, both federals and rebels; that is to say, not during the pending and recent troubles, but long ago, after the French invaders had retired. This coffee and lemon-juice draft acts slowly, but surely, on the fever. Incidentally, strong coffee is in a high degree stimulating, more persistent in this influence than whisky. Thus, when, during epidemics, I was under the necessity of passing many a wakeful night, I was accustomed to take a cup every three hours, and suffered little inconvenience from sleepiness.

In diarrhea and dysentery, a full purge of epsom salt, with a strong "spike" of lemon-juice, frequently cures when given at the inception of the attack, while it so considerably modifies rebellious cases that other medication that follows it will act like a charm, when otherwise little or no noticeable benefit would have resulted without the previous action of the purge and the subtle influence of the lemon.

In the treatment of gastric fevers, especially typhoid fever, I administer enemas of epsom salt and diluted lemon-juice; the latter about four times as strong as the strongest lemonade; these enemas work well, being cleansing, soothing, and refreshing. I also give all the lemonade the patients want or can be coaxed to drink. Usually they want it in sufficiency, as it slakes the burning thirst, as well as tending to assist general improvement. I use it in any and all disease conditions. And, remember, in Asiatic cholera a 50-percent solution, given as a clyster, kills the germs wherever it reaches them—acting as a germicide where other substance sufficiently potent to render the same service could not be tolerated. I will add that there is no soap known to the medical profession that is as cleansing as is pure lemon-juice, or more positively disinfecting.

The hundred and one uses that the lemon serves in the culinary department are explained in cook-books; and I have barely outlined a few leading hints of its possibilities in medicine, as there are many minor employments it does not disappoint.

The orange renders me great service in my practice, the ripe fruit here being so rich in saccharine substance that it nourishes, while at the same time supplying the requisite acid;

thus taking the place of lemonade, while in season, during the patient's convalescence. And it is relished by everyone. I permit my patients to suck all they wish. I have had convalescents who could not keep anything else on the stomach even for a minute, and these took no other food or drink for full fifteen days; yet, their stomachs never revolted once after the ingestion of the orange.

Medicinal Properties of Pineapples and Papaya

The pineapple is another medicinal fruit of precious value in my practice. It destroys scurvy in short order. It also is effective in diphtheria. The fresh fruit is of more value, as a rule, than other remedial agents, save the diphtheria-antitoxin, and that I have never used, since there has been none of the dreadful scourge here in recent times.

Next to the papaya, I find the pineapple the best digestant in clinical practice. A tablespoonful of the pure juice will digest an ordinary meal. Before the revolutions of recent years, I preserved the juice made up into syrup, in order to have it ready to send where there was none of the fruit or to use when none was ripened. I have thus had as much as fifty gallons prepared at one time. Now that the pure pineapple-juice is preserved and marketed, the same as grape-juice, it should be within the reach of everyone. I do not suppose that the canned fruit would be worth much, as that, as a rule, consists of the inferior stock.

The papaya excels all else as a digestant. There are to be had papain in syrup and in wine, and other preparations of the active principle. These are useful. However, the ripe fruit is the great infallible of all the digestants in use. Personally, I cannot eat salt fish or salt beef without subsequent inconvenience; yet, I can eat a full meal of either, provided I eat on top of it a piece of the papaya, about what one would of muskmelon; I never feel, then, that I ingested any such food. I have had the same experience even with dyspeptics, its use resulting in a perfect digestion. Mr. Edward Simmonds, of the U. S. Agricultural Department, has recently published extensive reports on the production and usefulness of the papaya, and he testifies to the fact that the juice of the ripe fruit liberally applied to raw meat reduces it to pulp in half an hour, and that the toughest meat wrapped in the leaves of the plant will be tender in two hours.

Mr. Simmonds makes the statement that the papaya can be grafted with more facility

than the apple or the peach, and that he hopes to succeed in grafting on the wild stalk, such as grows everywhere here in the woods, bearing a small fruit used only in preserves. Thus the standard fruit may be developed to stand something more of cold than it bears at present. The chief reason for grafting, apart from improving the quality, is, that more than half the plants are male, hence, bear no fruit.

Mr. Simmonds reports that the fruit stands shipment for long distances, going from Jamaica to London in perfect condition. He thinks that all the markets of the United States may be supplied, the Everglade coast of Florida, the Keys, Cuba, and Puerto Rico being promising fields of production, in fact, wherever there is exemption from frost. He gives fifteen months as the period to get ripe fruit from seed, although I get it in eight months; but, then, our eternal summer, with its approximately 180 inches of rainfall, really produces a widespread hotbed down here.

Dr. C. R. Oertel, of Santa Fe, Isle of Pines, and Dr. E. S. Goodhue, of The Doctorage, near Holualoa, Hawaii, are extensive growers, and they would be likely to supply seed. I am too far out of the way, and time by mail is too long. The better way is, to procure the ripe fruit and plant the seed at once; for, I find that the seeds act badly here when out of the fruit a few days, and I have to destroy plants like evil weeds, that come up from the fruit that falls off and rots on the ground.

I get fruits ranging from 10 to 25 pounds apiece, and the plants are great producers, bearing from twenty to fifty fruits each. Still, I shall have but very few this year, as a swarm of grasshoppers ate my plants in an hour one morning when I was not at home.

The efficacy of papayotin, the digestive principle, caused me to experiment with the ripe fruit itself, and with such success as I had not anticipated. Moreover, I relish it as a table-fruit more than the finest cantaloupe or muskmelon that grows anywhere, frequently eating of it three times a day. I usually have fruit ripening all the year 'round.

Wherever it can be grown successfully, accessible to American markets, papaya should be far more profitable than strawberries or oranges, because of the short time necessary to produce crops. As a minimum, an acre should give 20,000 fruits, with a fair chance of fifty percent more; while cultivation and marketing are far less laborious and

costly than in the case of strawberries and oranges.

Curative Virtues of Grapes in Dyspepsia

Grapes are of great value in dyspepsia. Two or three meals or a few days of it would be of no use, of course; in order to cure, the patient must eat and eat grapes, good ripe grapes, first, last, and all the time; keeping full of them until he is well. And, indeed, very few people get disgusted with the treatment. But, after the scavenger-grape begins to get its work in effectively, other foods are in liberal order. From the very start, the whites of two eggs, well beaten in half a glass of sweetened water and the juice of half a lemon, should be taken three times daily. A cup of coffee and milk, the latter boiled before mixing with an equal part of a good coffee, three times daily, an hour after the whites of the eggs, each time.

When the patient shows sufficient progress, rare beefsteak, roast mutton, fowl, baked apples, baked potatoes, and whole-wheat bread and butter may be taken in relished quantities; water being ingested copiously between meals. Meanwhile the equivalent of a tablespoonful of good ripe pineapple-juice should be taken on top of each meal; and this should be continued after the cure is accomplished, so as to keep digestion in order. The grapes not only may, but should be eaten, whatever the hour, the last thing before retiring at night, so that the stomach may be full of grapes all the time.

The contracted and inactive stomach is thus inflated and stimulated by the bulk of the grapes, and gradually is cleansed by the purifying juice that oozes from the fruit; while the seed and pulp of the fruit act as a scavenger-force along the entire alimentary canal, loosening and expelling dry, hard mucous scabs and fermenting food, even distending, cleaning, and toning the intestines all the way down to the anus.

There is nothing else to which vitiated nature responds so readily, and nothing that is relished so universally by the patients; and the priceless property of its nourishing virtue combines with the other high-grade services which the grape renders suffering humanity.

About Bananas and Some Starchy Tubers

The great staple of life here, among the poor, is the plantain, the grand cooking-banana, which, when ripe, has a nutritive value of four to five as against the best beef. There are big belts of coast where this fruit

and salt-water fish constitute the staple food-supply; and, although the infesting miasma and malaria is deadly to newcomers, the natives are healthy, and the chubby children are fat and rosy until remorseless vice claims them as they grow up. The field, the orchard, and the garden, if supplemented by milk and butter, possess facilities for banishing medicines from the earth and for the endowment of the human family anew with the health and long life of primeval time.

A glass of good lemonade on an empty stomach the first thing after rising in the morning would underwrite many a pain and disorder that otherwise are inseparable from the weary pilgrimage of sick life. A good, big, juicy orange possesses nearly equivalent virtues. Ripe apples, raw or baked, ripe peaches, plums, and most of the small fruits are health-breeders. I do not recall at this moment any vegetable that is prejudicial to health, while many of them are highly beneficial—tomatoes really being a crude vegetable calomel. Corn, black beans, and cooking-bananas comprise the staff of life among the poor down here, and the people would be healthy but for their deadly vices—the new rum and tobacco of the grownups, and the eating of dirt by the young.

We have here the best sweet-potato on earth, a prolific producer, yet, very rarely met on the table, the big plantations having no semblance of gardens. I have the sweet-potato all the year 'round. We have another root, the yucca. When a piece of the woody stalk is planted it makes tubers in six months; and they are very much more nutritive than the Irish potato. I am the only person within leagues of me who has a vegetable garden on the order of an American market-garden. This I established to teach the people who want gardens.

I am securing samples of fruit-trees from a Texas nursery, and my navel, Mediterranean sweet, and Valencia late oranges and my grape-fruit are in fruit somewhat this year, for the first time; the Villa Franca lemon does not yet bear, but the magnolia fig is loaded nearly all the year 'round, some ripening almost every day. Blackberries and dewberries are beginning a little; but apples, peaches, plums, cherries, and others of that kind have not yet had time. This is the grand orange and lemon garden of the world, without cold, and the trees never suffer for want of water.

There is nothing new in all this, I know—yet, it is worthy of a place in improved medication. *[To be continued.]*

What Others are Doing

"MIL"—A NEW TECHNICAL TERM

The new edition of the United States Pharmacopeia became the official standard on the first of September—just a few days before this number of *CLINICAL MEDICINE* will reach its readers. This revision (the 9th) contains some new features, including omissions and additions, to which we shall refer editorially at the proper time. One change, however, seems to call for immediate attention, namely, the adoption of the term "mil"—an abbreviation of milliliter in place of the familiar cubic centimeter, or, abbreviated, "Cc.". Hence, "mil" being only a new name for the Cc., designates the 1-1000th part of liter (1000 Cc.) and is approximately equivalent to 16 minims. Estimating roughly, therefore, four mils are equivalent to 1 fluid dram.

This new term ("mil") from now on will be encountered constantly in medical literature, and after this will be employed in the pages of *CLINICAL MEDICINE*. Consequently we ask our readers to impress its meaning upon their minds, in order that any misunderstanding may be avoided. For a few months when using this term, we shall add the more commonly known synonym Cc., in parentheses, until it has become sufficiently established in our terminology.

On the whole, the word seems to us a very convenient and satisfactory one. The pity is, that it will appear in American literature only, since, so far as we know, it has not been adopted in other countries. Possibly they may come to it in time.

THE CAUSAL RELATION OF FOOD TO SKIN DISEASES

In his treatise, "The Principles and Practice of Dermatology," Dr. W. A. Pusey enumerates as causes capable of affecting the health of the skin those which (1) act directly upon the cutaneous cells; those which affect either the supply or the composition of its nutritive fluids, the blood, and the lymph; and (3) those which influence the nervous apparatus concerned in the nutrition of the

cuticle. Among the internal causes of dermatoses, there are the toxic, the nutritional, and the nervous agencies, and, among the first-named, the author differentiates between drugs, foods, bacterial toxins, general infections, autotoxins.

As to the influence of food as a direct etiologic factor in diseases of the skin, Pusey has only little to say. He does refer, though, to the fact that too little food or a onesided dietary may predispose to affections of the skin by lowering its resistance; also he refers to the bad effects of overindulgences, or to the eating of indigestible food, through which gastrointestinal, toxic or metabolic disturbances are engendered.

Since the problem of hypersensitiveness to proteins came to be studied by von Behring in Germany, Richet in France, Rosenau and Anderson in this country, and others, the connection of various dermatoses, more particularly the urticaria following upon the administration of certain drugs, has received considerable attention; but the role that is played by various foods (except possibly the rash occurring after eating strawberries, tomatoes, besides a few other vegetable foodstuffs) was held to lie more in the direction of intestinal autointoxication, which might give rise to skin disorders as an expression of a perverted metabolism.

In *The New York Medical Journal* for July 29, Dr. Albert Strickler reports upon a study of forty-six patients suffering from eczema, whom he tested for their hypersensibility to beef, mutton, pork, fish, oysters, clams, crabs, eggs, cow-casein, wheat, oatmeal, barley, rice, strawberries and tomato.

The proteins were extracted from these substances by means of a weak alkali solution, and from these extracts test-fluids were prepared for endermic injections by which the existing anaphylaxis for certain food-proteins might be determined. In accordance with the reaction occurring in response to the tests in question, the diet was regulated for each individual person; local treatment being withheld whenever possible, in order to discover what benefit, if any, a given dietary exerted on the course of the eruption, and

with reference to the subjective and objective symptoms.

The author found that the anaphylactic food tests are of decided value in the causal diagnosis and also in the treatment of the various diseases of the skin; and parallel investigations in cases of urticaria and acne demonstrated that the benefit derived was greatest in eczema, where the development of the strong, positive reactions holds out great hope for improvement or cure in the condition of the skin, and also, in some instances, an amelioration of associated gastrointestinal disorder, by excluding the incriminated articles of food.

This method of studying and defining the causes of individual cases of eczema, is still in the experimental stage, but it is to be hoped that in time it will be developed practically. For the present, the general practitioner can make use of the lesson empirically by regulating and modifying the diet of his eczema-patients in various directions, until he has hit upon that particular dietary regimen in which the course of the cutaneous diseases is influenced most favorably; keeping in mind that hypersusceptibility to certain protein constituents of foods usually is an individual peculiarity and that for the same skin disease it may differ in several persons affected.

BACTERIAL CAUSES OF STILLBIRTHS

It is well known that the acute exanthemata are communicated from the mother to the fetus, while recent investigations have shown that pathogenic bacteria can be transmitted from the maternal to the fetal circulation, even though the placenta be not diseased.

In *The Journal of the American Medical Association* for July 29, Professor De Lee reports several cases of premature stillbirths, in which pure cultures of various septic organisms were found in the fetal and infantile organs and discharges. The mothers had not been seriously ill or had (with one exception) had only slight affections.

In one of Doctor De Lee's cases, the mother had shown symptoms of a slight pharyngitis, and a few days later fetal movements had ceased, labor occurring four weeks afterward. A macerated fetus was delivered, the organs containing pure cultures of streptococcus viridans. The inference is, of course, that the infection of the mother was not sufficient to produce palpable disease in her, even though the bacteria had passed into the blood; but

they were transmitted to the fetal circulation, and the fetal organism did not possess enough resisting power to overcome the infection.

While this subject still is largely in the stage of investigation, enough is known about it to emphasize the importance of attending to all, even the slightest, ailments of expectant mothers, and not to permit them to neglect "a mere cold," for instance, without ascertaining the bacterial cause, to take steps to counteract the infection, and to prevent its transmission to the fetus, by means of prompt specific, that is, antibacterial, treatment.

ADRENALIN IN INFANTILE PARALYSIS

At latest reports, between 5000 and 6000 children have been attacked by infantile paralysis in the city of New York, with a death rate of more than 20 percent; and thus far there seems to be no cessation of the epidemic, while the fear is constantly present that the disease may extend at any time into virgin territory. Under the circumstances, every physician should familiarize himself with the natural history of this infection, and especially with the methods of preventing and treating it.

The most important remedy recently suggested is adrenalin. It was brought to the attention of the profession by Dr. S. J. Meltzer, of New York, who reported some experimental work on monkeys and also some actual clinical experience with this drug. The adrenalin is introduced into the spinal canal, the object to be attained being: (1) to reduce the peripheral zones of active hyperemia, exudation, and edema surrounding the foci of the disease, and (2) to raise the blood pressure and improve the circulation in the affected areas.

If this agent can be employed early, before the pathologic process has advanced too far, it seems to give very good results. Thus, for instance, Doctor Bermingham reports favorably upon its use in 41 patients treated at the New York Throat, Nose, and Lung Hospital. It has also been tested experimentally on monkeys.

Doctor Meltzer says that in human infantile paralysis injection should be begun with a dose of 0.5 mil (Cc.) of adrenalin, and the injections are to be repeated at from 4- to 6-hour intervals. Monkeys stand well a dose as large as 2 mils in a single injection, but he advises caution in treating human patients. Doctor Meltzer also advises artificial respiration, by means of an apparatus

devised by himself, as soon as the patient shows respiratory insufficiency.

In commenting editorially, upon this use of adrenalin *The New York Medical Journal* says that there is much evidence to indicate that we have in adrenalin a direct activator of the antitoxic function of the blood. The editor explains its value in this way, rather than along the lines outlined by Doctor Meltzer.

In this connection, we once more wish to emphasize the desirability of prescribing calcium sulphide in every suspected case, especially as a prophylactic. This remedy can do no harm, and, while as yet there is no clinical experience on record to attest its value in poliomyelitis, it has proven of such merit in scarlet-fever and other contagious diseases that we are confident of its proving equally effective in infantile paralysis, providing it is given early and given to saturation.

MORE PRAISE FOR CALCIUM SULPHIDE

In *Ellingwood's Therapeutist* for August (p. 283), Dr. R. C. Rodecker gives a very interesting review of the early history of calcium sulphide, concluding his article with the following relative to its therapeutic action:

"Let me say at this time that you must not expect too much from the remedy; but you must also follow up the individual conditions of the case as well as your remedies. You would not expect purulent inguinal adenitis to get well alone without examining the groin and making necessary treatment there, would you, besides your internal treatment? You can give calcium sulphide without any fear whatever. If you give too much, you will cause your patient to become nauseated and vomit, when the dosage and frequency must be reduced. If the patient complains of belching up gas that tastes like rotten eggs, diminish your dose and give it before meals, when there is no presence of acid in the stomach, as it is decomposed by gastric juice.

"In all your cases which are accompanied by an old purulent discharge, no matter what it is or where it is, administer this remedy, and you will surprise yourself as well as earn more clientele.

"I have seen an old case of gleet, of a year's standing, dried up and cleaned, after going the gamut of sandalwood, copaiba, argyrol, and what not. Cleanse the urethra with some mild antiseptic solution, and see what the remedy will do.

"Middle-ear disease, where the discharge is thick and bloody: irrigate with boric-acid solution and give calcium sulphide. You will be amazed. In the terrible infection of anthrax, it should not be forgotten, nor in old indolent ulcers, nor in any skin disease that is of an eruptive or exudative character.

"Lastly, in the treatment of zymotic disease, no matter what it is, young or old, the period is shortened and the course of disease checked amazingly.

"Now as to my own experience I will make the broad statement that calcium sulphide is a prophylactic in the treatment of scarlet-fever.

"Last December a schoolteacher became ill with this disease. There were three small children in the family. They were in the same room and around her all the time. As soon as I was called, I gave each one 1 grain of the remedy four times a day, and they were not infected.

"Another family, where there were two children; one child had scarlet-fever and diphtheria severely. I followed out the same course. The other child escaped unscathed, although both stayed in the same room all the time.

"Previously, when I treated scarlatina, there often developed phlegmons and adenitis. I used antistreptococcic serum. Recently I find that, if I am called early and administer calcium sulphide along with the other treatment, there is little reason to worry about post-scarlatinal adenitis or otitis.

"The cases I have reference to occurred in January and February. The March number of *THE AMERICAN JOURNAL OF CLINICAL MEDICINE* lauds it very highly in the treatment, but I have not seen nor found anything that will proclaim it as a prophylactic. It is like all our remedies of our own personal materia medica. Do not expect too much of it individually, but we must do our part and combat the conditions as they arise, as well as treat the patient. Last of all, follow Abbott's slogan, 'Clean out—clean up—keep clean.' Rest assured, this old remedy will do its part for you, providing you get a good article and you exercise good judgment in its adaptation."

THE MENACE OF SYPHILIS TO THE FAMILY

Every new case of syphilis confronts the community with three distinct problems menacing to its health and wellbeing. There is the menace of the source of the present

infection (in most instances uncontrolled), the danger from which is shown by the presence of the new case. The case at hand in turn becomes a menace to the clean-living public in proportion to the extent of contact, the infectiousness of the lesions and the inadequacy of the treatment received. The third menace is, the great probability of passing the infection to the present or a future marital partner, and, in time, of blighting the coming generation.

The last mentioned danger recently was investigated, in the skin-department of the Boston Dispensary, by Dr. J. H. Blaisdell (*Boston Med. & Surg. Jour.*, July 6), who undertook a detailed study of 30 cases of family syphilis, in which all members of the family were included and their medical and social histories tabulated in detail.

The importance of dealing with the problem of family syphilis becomes evident from the summary of this investigation, from which it appears that, in 30 families, 59 out of 62 parents probably were infected. Of 132 possible children, only 23, most of them born before their parents' infection, were healthy. Of the remaining 109, syphilis claims—through miscarriage or later death, or congenital disease—at least 83 pregnancies.

The author concludes that syphilis will appear in the home of tomorrow in proportion to the inadequacy of treatment among the "men and women of the street" of today.

CITRATED MILK FOR FEEDING INFANTS

The essentials of the successful feeding of infants may be said to be these: (1) To supply in the food enough fats, proteins, sugars or carbohydrates, mineral matter, and water, to allow of normal growth. (2) The use of clean and fresh milk as the basis of the food, because that is the only available food possessing the property of changing into solids when acted upon by the gastric secretions, as well as to furnish proper work for the developing stomach. (3) The modifications of the milk that have for their purpose the changing of its curdling-property must interfere as little as possible with the normal digestive process.

Some years ago, Wright called attention to the fact that the addition of sodium citrate to milk lessens or entirely checks curdling from rennin action. On the basis of this finding, Poynton suggested the use, in infant feeding, of whole milk modified by the addition of sodium citrate. Since then citrated milk

has been employed very widely and now is generally recognized as of great value. In a report presented by F. Langmead to the Royal Society of Medicine, for instance (*Arch. of Ped.*, 1911, p. 688), it was shown that in 80 consecutive cases, in which poorly nourished infants from three weeks to four months of age had been fed with undiluted citrated milk, all had gained weight.

One of the chief advantages of this method of feeding is its simplicity. It avoids the objectionable features of dilution, the bulkiness of the meal, the complexity of frequent variations, the changes of artificially preserved or thickened cream, and the giving of too little fat.

As a whole, Poynton's method has been approved and his main conclusion supported, according to which citrated milk is suitable for the weaning of healthy infants, for increasing the amount of milk taken in the twenty-four hours, for correcting milk-dyspepsia, and for avoiding scurvy.

In a communication to *The Practitioner* (1916, vol. 96, p. 584), Poynton writes briefly, referring to objections and difficulties connected with his method. He insists that he does not advocate placing infants on citrated milk from the first, even though this may occasionally be successful.

Since pure cow's milk may not suit a particular infant, even though citrated, it is always best to begin with diluted milk, until the infant's reaction to cow's milk has been tested, after which the strength of the milk may be rapidly increased. Poynton warns, however, against keeping children upon diluted milk too long. He points out that his method not only is simple, but that it is far less costly than all other available modes of artificial infant feeding, and is, therefore, particularly useful in dealing with the children of the poor. Even here, however, citrated milk should never be resorted to as a routine measure, but it is necessary to individualize.

In the use of citrated milk, it has been observed that in some children undue nervousness develops, although Poynton has not observed such symptoms. He asserts, though, that to persevere month after month in what amounts to quite large quantities of any drug may lead to trouble, and for this reason the addition of sodium citrate to the milk must always be controlled, even though it is not likely to cause harm.

Despite the disadvantages adhering to this method of feeding infants, it may be said to be more readily adapted in general practice than are most others, and results secured by

it are sufficiently satisfactory to entitle this plan to the consideration of practitioners.

Regarding the method of preparing citrated milk, we quote as follows from A. C. Cotton, in his book, "The Medical Diseases of Infancy and Childhood," page 130: "For a moderate degree of disturbance one grain of sodium citrate to the ounce of milk is used; for more severe grades, two, three, or even five grains may be added. In practice the mother is instructed as to the proper dilution of the milk, and the proportions of cream and sugar for each bottle. In addition, she is given a bottle of "medicine" from which one teaspoonful is to be added to the baby's bottle before feeding. This "medicine" is an aqueous solution of sodium citrate; one, two or three grains to the teaspoonful, according to the prescriber's judgment, based upon the evidences of casein indigestion."

PAPAVERINE: A LITTLE-STUDIED ALKALOID OF OPIUM

Last year we published several notes on investigations, which had been reported in German medical journals, on the action and clinical uses of papaverine, an alkaloid of opium that seems to be of far greater value than is credited to it. In the following, we present to our readers further information on this drug, in which definite indications are suggested somewhat different from those for morphine.

Among the constituents of opium, the alkaloid papaverine, which first was isolated by Merck in 1848, appears to have been rather neglected in favor of the more active ones—morphine, codeine, heroin, and so on—and only little work has been devoted to its investigations. Cushny's "Pharmacology," 5th edition, page 223, places papaverine between codeine and morphine in its action on the central nervous system and declares it to be a comparatively weak poison, which even in large doses does not exert the soporific action of morphine and does not produce the same degree of excitement as codeine. According to this author, papaverine is more effective in slowing the heart-beat than is either morphine or codeine. It acts directly on the heart-muscle and not through the regulating centers.

In his classical work, Reil (1857) says that papaverine has no particular action upon the animal organism. Pictet and Wolfenstein, in "Die Pflanzenalkaloide" (1900), give an interesting chemical study of the alkaloid. Sollmann's "pharmacology" (1906, p. 202) merely mentions papaverine as being present

in crude opium in the proportion of 1 percent. In the textbook on "Positive Therapeutics" by Waugh and Abbott, papaverine is not referred to at all.

It was Pal who called attention particularly to the action of papaverine on smooth muscle. Aside from the authors named, but very few investigators have occupied themselves with this drug.

In a recent number of *The Archives of Internal Medicine* (June, 1916), Dr. David I. Macht presents the results of a pharmacologic and clinical study of papaverine, from which it appears that the alkaloid exhibits certain very interesting pharmacological properties, chief among which are its effects on the heart and the blood pressure, its action on the coronary circulation, its stimulating effect on the respiration, its relaxing effect on the smooth muscles, and its not inconsiderable narcotic power. Doctor Macht concludes that these properties, together with the comparatively low toxicity of the drug, encourage its use for therapeutic purposes, and his clinical experiences support him in this.

Macht found in his experiments that, if a frog's heart is perfused with a weak solution of papaverine hydrochloride (0.001 percent or less), a distinct slowing of the heart beat occurs, together with an increase in the tonicity of the heart-muscle and consequent increased contractions. If stronger solutions are used (0.01 to 0.1 percent), the stimulating action is absent and, instead, a greater slowing of the beat and relaxation of the heart-muscle are produced. This effect is increased by stronger solutions, and a heart-block effect may become evident, the auricle beating oftener than the ventricle, in the ratio of 2 to 1, 3 to 1, or even 4 to 1. Finally, the heart is arrested in diastole. This peculiar heart action is similar to that produced by narcotin.

The stimulating action of papaverine, in very small doses, in mammalia, was studied by the author in the rabbit, cat, and dog, partly by perfusing excised hearts, but more satisfactorily by the study of the heart *in situ*, with the chest opened and the circulation intact. It was found that small doses of papaverine produced a slight slowing of the heart beat and a marked increase in the tonicity of the heart-muscles. The strength of the contractions and volume-output were also increased. The stimulating effect was shown to be owing to a distinct action on the heart-muscle itself or the ganglia in it, and not upon the nerves.

These experiments demonstrated that papaverine is a powerful dilator of the coronary artery. The blood pressure is lowered through the action of papaverine chiefly by virtue of its peripheral effect on the vessel-walls themselves. Upon the blood-vessels, the alkaloid exerts a vasodilating action.

It was found, further, that papaverine exerts a distinctly stimulating effect upon the respiration. While the rate of respiration is slightly decreased, the volume-output and alveolar ventilation are markedly increased.

In confirmation of the findings of Pal, the author noted that in all cases papaverine causes the relaxation of smooth muscle-fibers.

As for the analgesic properties of papaverine, the experiments of Macht show that they are more marked than those of codeine, the effect of 40 mg. papaverine being not much inferior to that produced by 10 mg. of morphine. *The general narcotic effect was much less than that from morphine.*

Papaverine is *not a very toxic drug* and comparatively large doses can be given without danger. The lethal dose for higher animals is so high that it was not ascertained, for reasons of economy. In guinea-pigs, 100 mg. subcutaneously stimulated respiration, while 200 mg. produced violent convulsions, and death in about ten minutes. White mice required about 0.5 mg. per Gram-weight to produce convulsions, and death in half an hour. In rabbits, 2 Gm. have been mentioned as the lethal dose by mouth.

As to its clinical uses, Macht's experience corresponds with that of Pal. He administered amounts of 40 mg., dissolved in 200 mls (Cc.) of saline solution, and injected it slowly into a vein. No cumulative action has been observed. Papaverine is, for the most part, unchanged in the body and is excreted chiefly through the urine, bile, and partly through the small intestine.

From the results of the pharmacological experiments, it appears that papaverine is indicated in angina pectoris and in cases with hypertension. Pal employed it in aborting uremic crises. It may also be used as a substitute for morphine, where codeine is not effective, and, finally, its peculiar action on smooth muscle indicates its availability whenever there is visceral spasm. The author reports a number of cases in which papaverine was administered with encouraging results, either to relieve pain or for the purpose of utilizing its other properties. While its pain-relieving quality is inferior to

that of morphine, this alkaloid is as efficient as codeine, or even more so. In one instance, it was serviceable in relieving the cough of an advanced consumptive. In one case of bronchial asthma, the relief produced by papaverine was marked. Spasm of biliary ducts was relieved in several cases, and the antispasmodic properties were manifested also in several other cases.

Papaverine does not deserve to be relegated to the background, but appears to be a useful constituent of opium, which may be employed safely, more particularly for the relief of pain and spasm in organs possessing smooth muscular fibers, because the narcotic effect is only slight, and also because of its stimulating action on the respiration and on the coronary circulation. It is, of course, impossible to say at present whether it is a habit-forming drug. The fact that its narcotic effect is slight, as compared with its other actions, may justify the expectation that the danger in this respect is comparatively a negligible quantity.

THE TREATMENT OF ECLAMPSIA

Dr. J. O. Arnold (*Ther. Gaz.*, 1916, June, p. 381) compares the conservative, or Stroganoff, method of treating eclampsia, as it is employed on the European continent, with the more radical measures resorted to in English and American maternity hospitals, and concludes that as a rule a judicious combination of both measures is productive of better results than the attempt to follow either school alone. He includes the cases of so-called preeclamptic toxemia in those requiring prompt and active treatment.

From his personal observations, Doctor Arnold concludes that morphine in sufficient quantity (1-2 grain) is the safest and most effective agent for temporarily controlling the convulsions. It should be repeated in two hours, more or less, as may seem required for the purpose.

Early and free venesection is held to be the quickest and best means for securing elimination and reducing blood pressure. In order to replace the bulk of the toxic blood withdrawn by bleeding, to dilute the toxins present in the blood, and to counteract the existing acidosis, the author introduces an alkali solution by the Murphy drip-method. After cleansing the lower bowel, sodium bromide, 1 to 2 drams, and sodium carbonate, 2 to 3 drams, to the quart of physiologic salt solution are introduced in this manner as rapidly

and as constantly as the colon will absorb it. If the intestine should be intolerant of this solution or if the condition appears to call for it, in addition to this fluid enterically, sodium bicarbonate, 2 drams to the pint of physiologic salt-solution is given by hypodermoclysis, repeated as often as appears necessary.

In cases of eclampsia occurring before the eighth month, if there have been more than two or three convulsions, labor is induced. After the eighth month, pregnancy should be terminated, regardless of the number of convulsions; letting the circumstances and conditions determine whether the delivery shall be by the normal route, by inducing labor-pains, or by the more rapid method of cesarean section.

No drugs or nourishment of any kind (with the possible exception of water) are to be given by mouth until long after the convulsions have ceased, but it is advisable to continue the alkali-salt solution administered rectally until quantity and quality of the urine have become satisfactory.

A DOMESTIC REMEDY FOR RHEUMATISM: SULPHUR IN SOCKS

Many of us are familiar with the popular notion that carrying a horse-chestnut in one's pocket, or a potato, will cure rheumatism; and we have been smiling at this absurd conceit. The statement is also made that powdered sulphur worn inside the stocking is a cure for this condition, and we have the authority of Sir Lauder Brunton for the actuality of this "cure"; and in *The Lancet* for February 6, 1916, he relates an experience in point. A woman, he writes, complained of "rheumatism" in her hands, which failed to yield to the medicine prescribed by him. Thereupon a friend told her to powder the inside of her stockings with sulphur and wear them every night in bed. In a short time, this completely cured her.

This remedy certainly is simple, cheap, and easily applied, and it might prove useful in the case of the soldiers in the field. Sir Lauder thinks it hardly could do any harm, although he has no experience regarding the effect of sulphur continuously applied to the skin for some weeks together. At any rate, he thinks it is worth a trial. In this country, more persons seem to wear their sulphured socks in the daytime, in their shoes, and it is difficult to conceive that harm could come from the slight absorption through the moist

soles; and people have been known to continue this "cure" for months.

THE PROBLEM OF THE EPILEPTIC

A study of 64 cases of epilepsy recently was undertaken in patients of the neurological dispensary of Johns Hopkins Hospital. The patients' ages ranged between 14 and 60 years, and they were not selected in any way. Each patient was interviewed in the dispensary, then his home was visited and interviews were held with relatives and friends, and in some instances with school-teachers and employers. It was hoped to show by this study, in a small way, the need of an institution for those suffering from epilepsy, where the victim could be protected, trained, and studied.

From the results of this investigation, which is reported by L. R. Waters in *Johns Hopkins Hospital Bulletin* for June, 1916, it appears that, out of the 64 patients, 57 had made some attempt at education and that 30 of them had been obliged to leave school because of their epileptic attacks. A large percentage of the patients received no education whatever, and only a few of them can actually read and write. Although it has been attempted in some cities to hold special classes for epileptics, so many difficulties were found to be connected with this plan that it had to be abandoned.

Of the 64 epileptics in question, 12 have married, 5 of them because they were told that marriage would cure them of epilepsy. The married men (7) are all working and supporting their wives; 4 are fathers of healthy children. None of the married women (5) work away from home.

Of the 64 patients, 20 never have been able to attempt any work at all; the other 44 have tried many things, from errand boy to foreman in a clothing-factory, but there has been no special training in any one case. Of the 44 who began work, only 15 persevered for any length of time. Of the 15 named, 3 have never advanced in their earning power, 1 has receded, and 11 have advanced. In most of the 64 cases studied, no occupation of any kind was followed, the patients staying at home and their care devolving, as a rule, upon their mothers; "they just sit around" and, incidentally, are prone to get into mischief. At least 38 of the total of 64 patients are in obvious need of institutional care.

There are many stories of families suffering privations in order that the three or four dollars may be forthcoming each month to buy the patent medicine that is "guaranteed"

to cure "fits." One mother has spent all her savings—several thousand dollars—to keep her son in a private sanatorium that professes to cure epilepsy.

At present, very inadequate provision is made, by states and municipalities, for the care of epileptic patients. To declare them insane and send them to a state hospital, in no wise solves the problem, while the institutions for the care of backward children have all too little facilities for these patients. It can not be emphasized too strongly that there is great need for special institutions in which these unfortunates could be cared for and studied, and in which they could be prevented from propagating their kind and transmitting their terrible affliction to other generations. In these days of eugenics and of preventive medicine, the epileptic should receive his share of attention.

This brings to mind the appeal of the United Charities for relief for 15,000 women and children, which is referred to in an editorial in *The Lancet-Clinic* for June 3. The husbands and the fathers of these 15,000 are reported as being "insane, feeble-minded, epileptic, deserted, imprisoned or sick." The medical profession, continues the editorial, ought diligently to follow up the demand, that the first three groups—the insane, the feeble-minded, and the epileptic—be deprived, absolutely, through surgical operations, of the possibility of reproducing their kind.

WHY NOT TRY EMETINE IN CHRONIC DYSENTERY?

Distributed all over the country, there is a large number of persons suffering from chronic dysentery, some of them of many years' standing—a few of these cases dating back even to the Civil War. Every doctor knows that these cases can not easily be cured; in fact, they have become so obstinately chronic that they are the dread of the physician, who is likely to tremble every time one of these poor unfortunates comes into his office, begging relief.

Elsewhere in this number, we print a letter from a Missouri physician who has recently cured two patients who had been thus afflicted for many years; one being a man who contracted the disease during the Civil War. The remedy effecting the cures was emetine; and in both cases the results obtained were really marvelous.

We call attention to this doctor's experi-

ence, because we know there are hundreds of other physicians, especially throughout our southern states, who have had the same difficulties as our Missouri friend.

Why is it that so few of our doctors try the emetine-treatment? Of course, this alkaloid is not a cureall; it will not relieve every kind of bowel trouble; it won't change the average chronic intestinal invalid into a man full of "pep," nor will it otherwise renew his youth; but, even if in a small percentage of cases it does for a patient what it did in the two instances in question, it is certainly worthy of a trial.

We call special attention to this matter editorially, because we see the widening scope of emetine and are anxious that our friends in the field should make use of their opportunities to develop the values of this old-new alkaloid. Again we commend it to you for experimental observation.

PELLIDOL FOR FAVORING EPITHELIZATION OF WOUNDS

Pellidol, chemically, is the diazethyl derivative of amidoazotoluol, and constitutes a pale reddish-yellow powder, the physiologic function of which is, to stimulate the epithelization of wounds. One of its ardent advocates is W. Kaupe, of Bonn (*Muench. Med. Woch.*, Jan. 5, p. 32), has used it widely during the few years since its introduction by Kalle Q Co., and latterly tested it still more widely in his capacity as a surgeon in a military hospital.

When all else has failed the author has found that, almost without exception, pellidol caused the rapid covering over of wounds, purulent as well as others; while it never irritates (even in the case of infants) or produces other unpleasant symptoms, and, besides, scarcely discolors the skin and garments. Ordinarily, the new scar-skin is ideal, being soft and showing very little contraction, its influence in this direction being astounding, we are told. The author also believes this preparation to be moderately antiseptic, and declares that it represses exuberant granulation. Like scarlet-red, it proves highly efficacious in infantile wound-eczemas.

Kaupe employs pellidol in the form, principally, of a 2-percent-strength vaseline-salve or, also, zinc-oxide paste; and, for certain purposes, as a 5-percent white-bole powder. The latter, applied to serum-excreting wounds, quickly dries them up largely, however, through the action of the bole.

Miscellaneous Articles

Current Comment By A Country Doctor

ON WEARING black.—How many physicians have patients wearing the black of archaic custom, in order to show a grief that they feel—mayhap even one that they do not entertain with poignant distress? If the grief is a real one, it needs no advertising, no public demonstration; it is absolutely of the inner consciousness. The dead were never benefited by the wearing of mourning; they never will be. But the living certainly suffer no inconsiderable degree of harm from the donning of the somber-hued, publicity-giving tokens of regret for those who have passed beyond the present sphere of existence. It must be a distorted view that can imagine the departed as desiring other than the largest degree of happiness for those left behind, but the effect of black habiliments can not be other than bad, either from a psychological or a physical standpoint.

We all know that black clothing prevents proper penetration of the sun's rays. We also know that, in order to maintain a proper physiological balance, we must conform as nearly as possible to nature. Thus easily does the asseveration, that wearing of black mourning is wrong, reach a Q. E. D.

However, just here steps in prejudice, in the form of a desire to conform to custom—a custom, after all, even in the matter of mourning, tinged with the fear of "what will people say." Thus it is almost impossible to get people to view the matter rationally. How many of us have not pleaded with our women patients to stop wearing black or at least to wear black and white? Any use? No; the due ceremonial period must be observed, *a tout prix*.

Right here is an opportunity for some of our social leaders to establish a change in the fashion. If it is possible to switch custom from hoop- to hobble-skirts, certainly it must be feasible to change the mourning-color from the (in the light of modern science) physiological horror of black to something sensible.

Why, O why do not more men depart this life leaving behind them the imperative

mandate that no black shall be worn? And why should not we family doctors sedulously promulgate this evangel?

As long as there exists the almost universal nonconformity with religious as well as philosophical teachings—so far as acceptance of belief that paying the natural debt to the grave is not a cause for continued sorrow, on other than selfish grounds—presumably some form of mourning will be worn. Why not something that will permit of passage of the actinic rays, at least to some extent?

Personally, this writer trusts that he will at least achieve the negative remembrance of a forgetting of his grosser faults as well as of his many incompletenesses, but he sincerely trusts that his going will not be advertised by his loved ones robbing themselves of the beneficent physiological action of the sun's rays upon their bodies.

The Metric System.—The appearance of the new U. S. P. and N. F. emphasizes the fact that we must come to the logical metric system. These two pharmaceutical official standards in the past have aided us toward working up to the new system gradually, and certain drug manufacturers have helped by apportioning their grain divisions in tablets so as to permit a ready transference to the French system; still, the vast majority of American physicians *think* in grains, ounces, and *teaspoons*—despite even the uncertain size of the average teaspoon. Even some who, through residence in a metric-system-using locality or from desire to promote that system, have at one time employed the Gm. and the Cc., have allowed themselves to drift back to mental maintenance of the cruder system of weights and measures. And this regardless of the fact that the one unit of measure is adaptable to all things of modern life, both commercial and scientific, save only the time and astronomical factors.

From the oriental birthplace of human knowledge came the sixty (or duodecimal) system, with its adaptation to matters chronological and astronomical; probably because sixty has the greatest possible number

of divisors, namely all the units save 7, 8, and 9; besides also 10, 12, 15, 20, and 30. Certainly not a bad foundation for measure itself. This latter method, being universally accepted, may never be changed, probably will not be, but all else must come to the decimal system, with its definite division of terrestrial surface as a unit, always capable of mathematical proof or reestablishment; not such an artificial thing as the weight of sixty grains of wheat of presumed average size and dryness gathered in the middle of the ear—the device resorted to by unscientific searchers for a trade-weight unit upon which today rest our antiquated system of weights.

Presumably everyone admits the greater value of the metric system, but we are being forced into it slowly against great popular inertia. This, although it is easy to remember that a Gram is 15.432 grains (absolutely the only weight or liquid-measure unit that need be retained in the head), and that this is also a cubic centimeter of water at maximum density; which is practically one-fourth of a dram or teaspoonful. So easy it is, so simple, that we imagine it complicated.

But even now, although the metric system was legalized in the United States by act of congress as long ago as in 1866 (now 50 years), and although it is this country's only recognized standard of weights and measure, there are localities where it would be as well to underscore Gm., or even to write Gram or Gramme, when issuing a metric prescription. So much for that inertia and fixed custom. Even in the eighties, with a longtime established decimal system, the writer has been asked by the ignorant class of Mexicans kindly to make himself plain by stating an amount in *reales* instead of *centavos*. The same individual would pay his passenger fare on a kilometer basis and for his freight transportations on a kilogram basis, but it meant to him a complicated process of reduction to an older system. The difference between this backwardness and our own is but one of degree. "*Si, senor, y favor decir cuanto es en reales.*"

When to be glad one is not a medical nihilist.—These are the occasions: When the babies are suffering from divers forms of enterocolitis and one is exceedingly busy and distressingly anxious. When it is realized that the only "self-limitation" of these hot-weather troubles is the graveyard and a little white coffin, then it is good to remember that the skill of the physician with modern ideas is not limited to the use of the colon-tube and diet regulation—diet regulation based on

experience, textbooks, and divers calorie-statistic-filled laboratory findings, but still a most difficult proposition. When the aconitine has gotten in its work by overcoming the fever-manifested symptom, and the atropine—oft repeated in small dose to effect—has brought the circulation to the periphery, as indicated. When the lobeline stopped the spasms and the sulphocarbolates cleaned out the bacteria-laden digestive tract. When the limited, but certain, field of usefulness of copper arsenite has again been demonstrated in that nonfebrile, atonic, green-stooled diarrhea. When emetine—O, pshaw, when the game has been played successfully, from starvation to Bulgarian bacilli, and it has not been necessary to end treatment by filling out one of those printed forms supplied by the state for the purpose of maintaining vital statistics. Yes, those are the times when a real doctor is glad that he knows how to use drugs.

Another way the typewriter helps.—Give the patient as explicit directions as possible, of course, when making the visit; then when he comes to the office to get the needed additional medicine take a sheet of letterhead and briefly write out all directions—this in addition to directions on prescriptions issued. There is often an argument in the household as to just what the doctor said they were to do. How convenient to have that little "printed" slip: "Stop the medicine in the glass as soon as he perspires." "Yes, he says, 'Give the dose of salts this morning, anyway, but give a small one if the bowels have already acted.' " Looks like a little thing. It is, but it is one of those little things that show care and efficiency, and that count. Takes more time, but it is perfectly justifiable to add this time to the cost of the medicine. It is a legitimate expense to the patient: saves having to go four miles and ask "doc" just what he had said. Try this out and see whether the writer is correct and if the added effort does not pay.

Capsicum.—This is official in the pharmacopeias of all countries, but neither in the form of powder, tincture, nor, yet, as "No. 6" has it received the degree of utilization to which its therapeutic value entitles it, and this mainly because of its "hotness." As a seasoning and condiment, it has practically a universal use in the tropics, especially where the predominating diet is of a not oversavory vegetable nature.

Right here is the keynote to the employment of the drug—to increase gastro-intestinal secretion, thus aiding the absorption of othe

drugs in atonic conditions. This is the cardinal indication, but its value as a stimulant of the heart should not be overlooked. When strychnine has been pushed until fear is felt of getting cumulative action, add capsicin, pushing it freely. Capsicin (or the oleoresin) can be given in tablet form without objection on the part of the patient. The value in gastroenteric atony of the alcoholic convalescent, in connection with other indicated agents, is but an example of red pepper's merit.

When immediate absorption of medicine is desired, especially when fear of cumulative action from possibly unabsorbed frequently repeated doses of a potent agent is feared, try capsicin. At times, continued use will result in slight rectal inconvenience, but this is seldom a factor to be considered; the "burning" will not last long and the remedy may be stopped if the complaint arises. The hepatic action of capsicum is a secondary one, but not to be disregarded, and its addition to malarial treatment is one of the most frequent fields of use.

That Wine of Cardui Sui.—Have you read the stenographic reports in the current numbers of *The Journal of the A. M. A.*? They make very interesting reading.

Departing from its usual custom, CLINICAL MEDICINE reproduces in its June number, under the heading of "The Arts of Peace," an article treating of modern chemistry and mainly of the NO₂ potent combination—of nitrating processes. This most accurate and readable treatise is well worth the space given it. If anyone has not read it with care, he should turn to his files and do so.

While the element by itself is nearly inert, organic progress on this globe proceeded only by the aid of nitrogen, as a slow-working factor, during the long eons before man took a hand in the more rapid change-working of bioplasm. Since the adaptation of gunpowder to warfare and the bursting of feudal night by the penetration of the Sir Knight's breastplate with arquebus in proletarian hands, down to the present Armageddon of commercial hell run wild, it is the nitrogen that has been essential to explosive activity of destruction. Its uses in phenylamin-dye production, agriculture, and medicine manufacture are now practically held in subordination, especially in Germany, where a system of high grade Teutonic efficiency, as wonderful as the national development of organic chemistry itself, has taken over the well-organized factories for production of constructive chemical products and has instantly

adjusted them to the producing of destructive nitrated combinations.

Every thinking American would do well to read the article just alluded to. It carries a lesson that should be *soaked in* by a people who live in a country of limitless water-power and breathe an atmosphere consisting of about four-fifths nitrogen, and, yet, depend upon a lessening foreign supply for it. Depend upon the nitrate beds of Chile, deposits that made Lord North rich and were the particular commercial cause of war and hatred between Chile and Peru. If we Americans learn the lesson, it may place us in a position to adopt the only means that will enable us to maintain efficiency in the arts of peace, and, if we go into the war business, to save a fabulous bill to be paid in lives and money.

Some few of our fellow citizens there may be who still believe that the Germans are mainly noted for making the best beer. They probably do so, being, as a nation, the best chemists and bacteriologists on earth.

Kindly do not accuse the typer of these thoughts of entertaining hyphenated racial prejudice. The hyphen was lost in a couple of hundred years of ancestral pursuit of religious liberty and witches, agriculture and Indians, not far from the environs of Massachusetts Bay, and eventual conclusion that economic environment would be boosted by complete, if delayed, disloyalty to one George Brunswick, at that time figurehead for a group of exploiters whose dealings were considered a bit too underdone by the then developing unhyphenates.

A. L. NOURSE.

Sawyer ville, Ala.

DOCTOR COTTON

Doctor Cotton is dead. It is easy to say, and hard to realize. But he is dead. Did you know him? Did you ever sit under his ministrations? Then you loved him as I loved him. Doctor Cotton is dead, but not before he had solved life's mysteries for himself, as each of us must do. When on July 12, after a brief indisposition he rounded out almost his three score years and ten, he had been at work right up to the last day of his long and busy life, and literally died as he had wished to die with his boots on, quietly falling asleep in his own arm chair. Indeed, the evening before his death he had made an appointment to examine a child with heart trouble at the very hour when he, himself, succumbed to the same affection.

The funeral services held at the Warren Avenue Congregational Church, with a large audience of his friends and patients in attendance and amid a wealth of floral beauty, were peculiarly impressive. The eloquent and scholarly address of his pastor, Rev. Dr. Jenkins, rightly laid special emphasis upon Doctor Cotton's remarkable personality. To come into casual contact with him was to feel the largeness of the man, the irresistible force of his mind and character. To know him intimately was a liberal education in itself and a charming experience.

The manner of his passing was, in a measure, significant of the dominance of his spirit. In spite of evident failing heart and labored respiration, which he had experienced for some days upon slight exertion, the vigor of Doctor Cotton's mind was unimpaired almost to the last hour; his old time humor, his wonderful memory, his rich imagination and his unselfish thoughtfulness were with him to the end. And so, as he lay in the last repose of death, his noble features seemed in sleep; he would surely open his eyes and speak to us in familiar measured words, every one worth while. Who of us can ever forget that voice of his, so remarkably rich, that explosive yet melodious laugh, punctuating his contagious humor, and all those little mannerisms of facial expression and gesture—the smile of his eye, the way he carried his magnificent head? Who of us shall ever forget the delight of his reminiscences or the worth of his opinion and advice where wisdom was the need? Was there ever a man more fearless than he in his loyalty to what he considered vital truth and justice, or more unselfishly loyal to his friends? So strong upon me are these memories of him that I must thus digress from his funeral day to the man that shall always live with those who knew him well. His expression to a friend was genuine, right out of the marrow of his spirit. His influence was stimulating, dignifying and ennobling.

Following the brief service lead by Doctor Jenkins, Doctor Cotton's comrades of the G. A. R. paid genuine tribute to his patriotism. At Graceland Cemetery, Masonic ceremonies conducted by Garfield Lodge, of which he was a member, fittingly concluded this burial service in honor of a man who will be sadly missed by a large circle of patients to whom he had ministered. The memory of him will be cherished by a host of students whom he had taught, and by men and women with whom he came in contact. Among medical men of Chicago and its vicinity there is none

other so widely popular and beloved as was Doctor Cotton. This fact is a splendid monument in itself.

No one of us can fill the place of any other man, however humble. Each leaves his own impress upon his time, even as his individual thumb-print is the symbol of his peculiar personality, indelibly different, all his own. But this is particularly true of the man who towers above his fellows in the bigness of his personality. The subtle combination of gifts and graces with which the Almighty endowed Doctor Cotton raised him high above us in personality and ability, yet he delighted in the level of his common fellow men. Fortunate are we who have enjoyed his fellowship and his friendship.

This is not the place for a biographic sketch. Those who are not already familiar with the details of his life and official relations can find an extended sketch of his life in the second volume of the Historical Encyclopedia of Illinois, published in 1915. And it will interest his friends to know that he had a recent photograph taken at Walinger's Studio, 37 South Wabash Avenue, Chicago. It is unusually fine, as perpetuating the smile and alert expression which he often turned upon us in conversation. As his face looks down at me from its frame upon my office wall, I am in good company.

ARTHUR M. CORWIN.

Chicago, Ill.

ENDOCARDITIS

Under all circumstances, it is a part of wisdom to examine the heart frequently throughout any infectious disease, from start to finish. The fact is, the heart is undergoing a most terrific strain, while the blood pressure is being increased, during the rapid process of invasion, by multiplied millions of bacteria, which latter condition also is rapidly followed by toxemia from bacterial ptomaines. The ptomaines produce the inflammatory action on the inner walls of the heart.

Of the infectious diseases, rheumatism and chorea head the list, as being predisposing causes of endocarditis. However, this form of heart disease has been the sequel of diphtheria, scarlet-fever, measles, smallpox, typhoid fever, pneumonia, and influenza.

The fact having been established clinically that endocarditis is a secondary disease, gives us a fair opportunity to investigate the history of the case, to determine the class of infection to which a given heart lesion is due. If from such history we find that the patient

has had frequent attacks of rheumatic arthritis, with more or less continued soreness between attacks, we are safe in accounting the valvular lesions of the heart as due to a continuous irritation of its membrane by a mixed infection, among which rheumatic bacteria predominate. By whatever infectious disease the predominant bacteria are manifested, we may determine the characteristic form of this heart disease.

I shall not here attempt to trace down the etiology of each of these infectious diseases; however, in the study of the disease of endocarditis as a whole, it is necessary to understand the predisposing causes and the etiological factors in each of the specified diseases characterized by a bacterial name.

If the ptomaines of some bacteria are more poisonous than those of others, is it not probable that we may expect to find, upon close examination of the heart, definite evidence of organic changes, such as irregularity of pulse, valvular murmurs, and dilatation of the heart itself?

Having determined that our patient has been the victim of a certain infectious disease, and knowing the general effect of the ptomaines of such bacteria on mucous and serous membranes, it is not so difficult to account for such symptoms as a true chill or succession of chills, and the fever may be either typhoid-like or intermittent or remittent in its character.

Why rheumatism and chorea should be responsible for more endocarditis than the others, may be accounted for by the difference in toxicity of bacterial ptomaines. Yet, even in some of the worst cases, careful and repeated examinations by competent observers may fail to detect any cardiac murmurs whatever.

Again, the simple form may give rise to embolism in different parts of the body, and may also be accompanied by pleurisy or pneumonia.

The great harm that simple endocarditis does the patient is not immediate, but consists in laying the foundation for ultimate changes in the valves which sooner or later impair the functional integrity of the heart.

In the matter of diagnosis, some of the following points may serve as guides, by contrast or by elimination.

First, does endocarditis exist at all? Secondly, is it simple or malignant?

Usually there is a distinct systolic apical murmur and the heart is enlarged, with a more widely diffused impulse than normal and an excited, though feeble, action. Func-

tional cardiac murmurs are not sufficient to establish the diagnosis, as many acute diseases give rise to functional cardiac murmurs.

Typhoid fever may be accurately determined by the Widal test or by examination of the stools for typhoid-bacilli.

Acute tuberculosis has its hectic fever, rapid wasting, pulmonary signs; as a rule, no objective cardiac symptoms.

Malarial fever may be recognized by the discovery of the characteristic organisms in the blood.

Septicemia and pyemia exhibit symptoms identical with those seen in certain forms of malignant endocarditis—which disease has, indeed, been called an arterial pyemia.

During the months of January and February of this year, our community had its full share of an epidemic of influenza and grip. Among those cases which suffered from severe influenza-infection, causing laryngitis and also invading the trachea and larger bronchi, and which did not yield readily to medicinal treatment, were the kind which showed organic heart lesions.

The general symptoms of endocarditis that followed in the wake of influenza were as follows, the respiratory tract having been the primary seat of infection: Later developments showed loss of hemoglobin in the red corpuscles of the blood, loud systole and weak diastolic beat of heart, and a feeble pulse. A growing tendency to prostration. The heart excited by trivial causes. Valvular murmur distinct, though irregular. The depleted strength, due to influenza infection, regained but very slowly.

As a rule, endocarditis following influenza-infection occurs in patients fifty years old and older, the bacterial resistance of the tissue-cells being less at this age. The residual energy at this age begins its decline; especially after undergoing the strain of resistance to some infectious disease.

Usually the best results for the relief of endocarditis following influenza have come from eliminative treatment and rest. It is highly necessary to get the liver to help rid the blood of ptomaines and toxic material. For this purpose, I have found best results to be obtained from a good quality of syrup of juglans (butternut root). Give this remedy in doses of such size as the individual cases may require, ranging from 1 dram to 2 ounces.

Diet is an important matter. This does not mean starving the patient, but must be selective. Food should be well cooked. All milk should be pasteurized. Mild fruit-

juices are well borne by those who cannot bear milk.

In the early stages of influenza-infection, good results may be obtained by an influenza mixed-infection bacterin, following the rules carefully for its administration.

Endocarditis arising from other causes and designated by whatever name requires a most careful investigation of the etiological factors. It is important that the patient should be instructed in the conservation of his strength. He must be taught that rest, and a well-directed diet, are going to be the greatest benefactors in the case.

The prognosis should be guarded, for you cannot promise a new heart. After the chronic or malignant conditions have developed and pathological changes have taken place, general resistance and vitality succumb eventually to this disease.

M. F. WOODARD.

Bloomington, Ind.

[In his work on "focal infections," Rosenow showed that many of these cases of endocarditis, including some of very obscure origin, are due to the streptococcus hemolyticus. The point of entry of this organism is very often the tonsil, which explains the association and the preexistence of an acute sore-throat or of "rheumatism" in many of these heart cases. The prevailing "grip" of last winter was remarkable for the comparative rarity of the influenza bacillus and the *practically constant presence of the streptococcus and the pneumococcus*. It was this dangerous mixed infection that made the dreaded complications (of which endocarditis was one) so exceedingly common.

And the moral—the therapeutic one? (Of course every story must have a moral.) Bacterin treatment, with the streptococcus as the principal ingredient of the vaccine, should be at least *one* of the first thoughts in every acute case of endocarditis. Also, the doctor should examine the throat, the teeth, the appendicular region, and any other suspicious portion of the patient's anatomy, to find the real back-of-it-all cause.

Elimination, of course. Calcium sulphide, echinacea, and Crédé's silver preparation by inunction. Other things as indicated. Doctor Woodard's paper is a good one, and should set us all to thinking.—Ed.]

AN HONOR TO PROFESSOR LLOYD

We are greatly pleased to learn through our exchanges that the University of Cin-

cinnati has honored Professor John Uri Lloyd by conferring upon him the degree of Doctor of Science. We know of no man who is more deserving of this honor than our friend Lloyd. No man has done more conscientious work, and few men have contributed more, through scientific study, to the development of the art of healing than has the good Professor, who personally is as lovable and worthy of admiration as he is erudite and constructive in the field of general scientific work.

We take this opportunity to give him the "glad hand" and wish him many years more of hard work and perfect happiness. For, is it not true that work and happiness are inseparable partners in this vale of tears? So, may Friend Lloyd have—and enjoy—enough of both.

CHLORAZENE, THE NEW ANTISEPTIC: CAUTION, SUGGESTION, PROMISE

Already we are beginning to receive inquiries concerning Dakin's new antiseptic, chlorazene (chloramine), which was described editorially in the last number of *CLINICAL MEDICINE* (page 647). We are perfectly willing to say, frankly, that we can not answer all the questions asked, since this antiseptic is new in this country and a sufficient volume of clinical reports has not yet been received. We can, however, throw light on some things, suggest lines of research, and point out possibilities.

First: Until we know more about it, chlorazene should not be taken by the mouth as an intestinal antiseptic. When Dakin described it as being "nontoxic," he had in mind its topical application as an external antiseptic. When swallowed in the tablet form or in strong solutions, it is decomposed by the hydrochloric acid of the stomach. Chlorine gas apparently is not set free, but a crystalline salt, called dichloramine by Chat-taway, is precipitated, the action of which has not yet been studied. We shall report upon this later.

In writing prescriptions for chlorazene, or compounding mixtures containing it, the doctor should avoid acids, even such mild ones as boric acid. Also, avoid mixing it with alcohol, as well as with hydrogen peroxide or any other powerful antiseptic.

In devising chlorazene-containing mouth-washes, gargles, and the like, remember that this antiseptic is slightly bitter. This taste may be covered by dissolving the substance in one of the aromatic waters, such, for instance, as those of cassia, cinnamon, and

mint. If desired, the solution may be slightly sweetened with a small tablet of saccharin, or a little glycerin may be added.

The following makes a very pleasant mouth-wash:

Chlorazene.....	grs. 7 1-2
Menthol.....	gr. 1-10
Glycerin.....	drs. 2
Aq. Cinnamomi.....	ozs. 2 1-2
Aqua, q. s. ad.....	ozs. 8

The slightly bitter taste disappears almost immediately, leaving behind a delightfully "clean" sensation persisting for hours. For throat use, we believe chlorazene should replace all other antiseptics.

The writer wishes to see chlorazene tried in pyorrhea, to swab out the "pockets" after removal of necrotic tissue. It should destroy the organisms almost immediately.

Topical applications of chlorazene to wounds and to the mucous membranes as a rule are borne exceedingly well—far better than any other antiseptic approaching it in germicidal power. Begin with weak solutions, remembering how powerfully germicidal this substance is. For ordinary throat and nasal use 1-5 of 1 percent is strong enough. In diphtheria and septic processes increase to 1-2 or even 1 percent—stronger if necessary. In wounds requiring moist dressings or irrigation, solutions of 1 to 4 percent may be employed.

The greater the amount of discharge from any wound or cavity treated, the higher the concentration of chlorazene called for. Serum, blood or pus should be removed, if possible, in the ordinary way, whereupon the wound may be irrigated or kept moist with the chlorazene-solution; this treatment clearing up septic conditions, so we are informed, in a really magical way. On surfaces presenting no discharge, a very weak solution is satisfactory.

Chlorazene may be mixed with petrolatum or other fatty base to make antiseptic dressings, and these are especially valuable when there is a tendency for dressings to stick. In England a 35-percent chlorazene gauze is on the market, but it has not yet been offered in this country.

One physician (who is also a stock-grower) has inquired about the possible use of chlorazene for sterilizing his milk-cans, milk-bottles, the hands of milkers, the teats of cows, and the dairy-room and surroundings generally. It ought to prove admirable for that purpose. In a solution containing 1 part of chlorazene in 5000 of water, Mr. Nielsen tells us, the typhoid-bacillus will

"curl up and die" almost immediately. Such a solution could be made for a few cents a gallon, and, being practically odorless and apparently harmless, it should exactly meet the needs of those who are desirous of producing clean milk.

Another suggestion is, that chlorazene be added to drinking-water of doubtful quality. Also an admirable idea. Chlorinated lime is used to sterilize city-water by putting it into the mains at the ratio of 16 pounds to every million gallons; but that compound is very unstable and gives to the water an objectionable chlorine-taste and odor. On all counts, chlorazene will do this better. A 1 to 10,000 solution will be strong enough.

Chlorazene will also be used, we feel sure, to disinfect the stools of persons suffering from typhoid fever, infantile paralysis, and other infectious diseases; to put into the bath-water of the sick, convalescents, and nurses; to sterilize dishes, eating-utensils, and clothing. It is admirably adapted for these purposes, since it can readily be dissolved in hot, even boiling, water, without losing efficiency. Steam-vapors containing chlorazene have been employed by Colonel Gordon, of the Royal British Army Medical College, for disinfecting rooms and to clear the throats of meningococcus-carriers. He obtained remarkable results.

The preceding, presented briefly and, we trust, not too dogmatically, indicate some of the lines of promise for this new germicidal and disinfectant agent. We give them here, and at this time, since we hope our readers will be inclined to join us in working out the problems suggested.

We purposely avoid detailed discussion at this time, of the surgical uses of chlorazene, although this field is an inviting one and the one in which we have the most intense interest. We believe it wiser to avoid promises and eschew prophecy, being content to leave the evolution of technic and the outlining of exact indications to the many clinicians who are now experimenting with it in practice.

We can only say now that as an irrigant or application to septic wounds, chlorazene gives promise of proving most satisfactory. Reports are beginning to come in. For instance, a Boston physician reports its use on a gangrenous foot, which he believes it saved from amputation; a New York physician used it in an infected uterus, with retained lochia, which cleared up at once, although lysol had failed utterly; while another physi-

cian has employed it in a whole series of infected accident wounds with most satisfactory results.

In good season we hope to learn from the experience of many of our readers. We shall look to them to help us perfect the technic for its best employment. An antiseptic like chlorazene which combines practical non-toxicity with high germicidal activity *must* command attention.

SOME "KINKS" IN INTRAVENOUS THERAPY

Upon my return from the Spanish-American War, in 1900, I began to indulge my spare moments in thoughts about intravenous medication. It was not that I was more courageous than other medical men, nor did I seek to present the spectacular in practice, but the idea pressed me that quicker and more

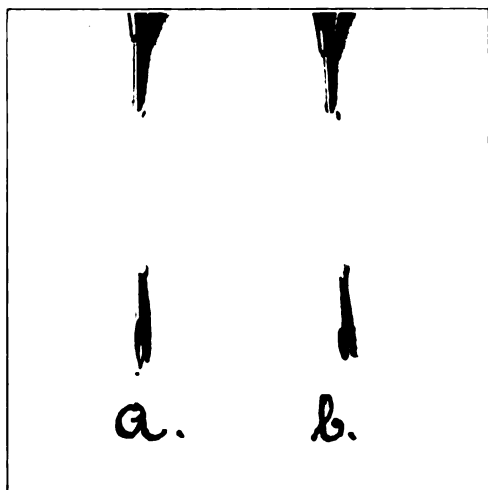


Fig. 1. (a) The usual point on hypodermic needle. (b) Blunt point used by Doctor Ross in intravenous work.

substantial results could be obtained in this way than by the methods in vogue.

After a brief experience with the old surgical method of cutting down, ligating and opening the vein, I changed to the needle-operation. I am not sure that I was the first to use the needle for intravenous therapy, but I do know that the method makes it possible for every physician in the practice of medicine to become an intravenous operator. The following suggestions are offered to help the beginner in making an easy start in what promises to be the universal practice in the years to come.

The injection needle itself plays an important part in the success or failure of the

beginner in intravenous therapy. All needles to be purchased at present exhibit such characteristics as are seen in (a) Figure 1—a long cutting surface and ending in a sharp point. Such a needle will pass through the vein without the operator knowing it. On the other hand, a needle having a short cutting surface and a rounded point, as seen



Fig. 2. First step in applying tourniquet.

in (b) Figure 1, will impart to the operator the sensation as of passing into space as soon as the needle goes through the anterior wall of the well distended vein. Any needle can be given such a shape by means of a carborundum stone, after which it is finished with a smooth stone and leather strop. The needle should be put into prime condition each morning before the day's work begins.

A pure gum rubber tube, 1-32 \times 132, three feet long, doubled, makes, perhaps, the most satisfactory tourniquet one can employ. The venous circulation must be blocked completely without interfering with the arterial flow, in order to obtain the maximum of venous distention. The beginner will find it very advantageous to obtain the greatest possible distention of the vein before he attempts to insert the needle. The adjustment of the tourniquet must be made in such a way that when the operator has inserted the needle the tourniquet can easily be released with one hand. Observe carefully the steps as shown in Figures 2, 3, and 4.

In Figure 2 the first operation is shown. Before the second step is taken, as shown in Figure 3, the tourniquet must be put smartly on the stretch. Then reach under with the middle-finger of left hand, engage the over-lapping tubes, and complete the operation as in Figure 4. A little practice will enable one to adjust the tourniquet quickly and just taut enough to accomplish the distention of vein required.

After the tourniquet has been applied, the field of operation can be made surgically clean by means of a little pledget of cotton moistened with alcohol. Some claim that this method of securing cleanliness is not sufficient, but in all my experience, aggregating thousands of cases, I never have had a single case of infection occur.

Before beginning the operation the air should be expelled from the syringe and needle in the usual way. Then pick up the skin and introduce the needle parallel to and directly over the vein. With the point of the needle resting on the vein, elevate the



Fig. 3. Second step—stretching and tying tourniquet.

distal end of the syringe slightly and enter lumen of vein. By releasing plunger slightly, the blood will soon back into the syringe; when this signal is observed, release the tourniquet and proceed to discharge slowly the contents of the syringe into the blood channel.

In all intravenous treatments in which only small amounts are injected, the patient

may remain sitting with arm resting on the knee of the operator. Where larger amounts are given, using the gravity-method, the pa-



Fig. 4. The tourniquet applied.

tient should always be placed in the horizontal position.

In conclusion I will say that if the beginner will confine this practice to products put up by reputable pharmaceutical houses, following implicitly the directions given, he will have less need to fear trouble than from an ordinary hypodermic operation.

JAMES ROSS.

Chicago, Ill.

HOW I TREAT DIARRHEA

Overeating unseasonable foods, spoiled food, and drinking too generously of ice-water are the causes of nine-tenths of simple diarrhea, and these will bring us, as the summer advances, many patients who will be grateful for quick and efficient relief. While many of our patients will get well merely by absolute rest and careful dieting, there will be some in whom this condition will prove very obstinate and which try our skill to the utmost.

It is well to have some definite mode of procedure that will benefit all cases, and then to select our remedies to meet the various symptoms as they arise.

First of all, in this disease, as in all others, if we wish to be appreciated and receive the commendation of our patient, we must proceed to make him comfortable, and relieve the pain, tenesmus, and vomiting. This can best be done by means of a hypodermic injection of as small a dose of an opiate as will bring

about this result, or, if the patient objects to the needle (as I find many do), 1-8 grain of codeine may be given by mouth. Also a suppository of 1-6 grain of aqueous extract of opium and 1-12 grain of extract of belladonna may prove quite efficient.

Wash out the colon with physiologic saline-solution. If we still suspect putrescing food in the intestine, remove it with a generous dose of castor-oil or a saline laxative. When the bowel is clean, keep it disinfected with the sulphocarbolates.

Do not encourage your patients to take food too soon. Give the irritated alimentary canal time to repair the damage and resume its normal condition. Order toast-water, barley-water, albumen-water (at first); then the soft foods, gradually getting back to the ordinary diet.

At this stage, I find a course of the Bulgarian bacillus tablets very beneficial, and I continue these for several weeks. The above procedure is for the simple diarrheas, but, in connection with the remedies indicated, it will prove beneficial in all varieties.

I. S. BRETZ.

Cleveland, O.

SUGGESTIONS ABOUT USING EMETINE

These days we read a great deal about emetine, the alkaloid of *ipecacuanha*. In 1686, this Brazilian root obtained a considerable reputation in Paris, through a celebrated physician and his student Helvetius, who gained some fame by his successful treatment of diarrhea and dysentery. Nicholas Dalbery, later, gave it in moderate doses for hemorrhage. The main active principle, emetine, was known as far back as 1820, when it was obtained by Pelletier and Caventou.

Doctor Hempel says that *ipecac* affects primarily the solar plexus and the pneumogastric nerve. It irritates these centers, producing vascular erethism. Hence, it is useful for hemorrhage and inflammation of the bronchial tubes. Its action upon the pneumogastric nerve is remarkable, affecting all the branches as a spasmodic irritant, resulting in asthma in the air-passages, and in vomiting with regard to the stomach. Some people show an idiosyncrasy against *ipecac*, and the slightest amount of powdered *ipecac* will produce an asthmatic attack.

Taking up the group-study of the drug, Hempel mentions nosebleed as having been cured by *ipecac*.

In the chylopoietic group: Hematemesis, attended by nausea, diarrhea, with fermenting stools, hemorrhage from the bowels, profuse bleeding from hemorrhoidal vessels, hematuria, urinary urging, and spasmodic retention of urine.

In the sexual group: hemorrhage from the uterus, metrorrhagia and menorrhagia, accompanied by nausea and vomiting.

Miscarriage may be prevented by means of *ipecac*. (Why not emetine?)

Respiratory and fever groupings show many indications for *ipecac*. Soon emetine will find its place in treating these conditions. In intelligent hands, *ipecac* is a valuable drug, and it is little wonder that emetine possesses some of the valuable characteristics of the mother drug.

W. N. FOWLER.

Kalamazoo, Mich.

DOES IT PAY?

I have recently passed through a rather enlightening experience that seems worthy of recording. I am a member of the Medical Reserve Corps of the United States Army and have been on active duty for some time, helping out "under emergency." My hours were from 5:15 a. m. until 9:30 p. m., counting out the actual time required for meals. Not alone did I have to put in these long and sometimes onerous hours, but I was personally responsible, to a certain degree, for the care and maintenance of a large camp. For this service, good or bad—as it may have been—I was paid at the rate of \$5.55 per day, out of which came \$1.00 per day for mess-charges.

It was necessary during this time to employ certain civilian labor, and I recommended for this work a man who for years has given me the best of service in his line. For this work, which required no headwork whatever—consisting simply in following my instructions—this workman was paid \$4.00 for an 8-hour day, in addition to which, his meals were furnished free to him by the company-mess where he chanced to be at work.

In other words, with all of my many years of professional and scientific training, I received exactly 50 cents per day more pay from the good old U. S. A. than did my workman. The latter worked eight hours per day, the law not allowing him to work more; I worked, and worked hard, from twelve to fourteen hours every day, and for these my services was paid 50 cents per day more than was my own ordinary laboring man.

I am not "kicking" about what I personally was paid (for the love of the work I would be willing to do it without pay), but I think it worth while to point out this particular case, as showing just how "downtrodden" our working-men are. This man could, and would, willingly have worked ten, twelve, sixteen hours every day, to his own as well as to the Government's gain; but, no, our labor unions prescribe an 8-hour day, and that was all he was permitted to work—and then he received only 50 cents less for eight hours' labor than a highly trained man was paid for working hard for twelve hours.

Funny, isn't it? But, then, one needs votes—and the professional man can marshal but a very few.

EXPERIENCE.

EMETINE IN UTERINE HEMORRHAGE

I have under my care a woman, 71 years of age, who had uterine hemorrhage caused by a fibroid tumor; however, in a consultation with another physician, it was decided that, on account of the patient's age and condition, an operation was out of the question.

Then I gave two doses of emetine hydrochloride, each four granules of 1-64 grain, one hour apart, and this controlled the hemorrhage; in fact, the first dose had acted before the second dose was given, and inside of two hours after the second dose the flooding ceased entirely. I asked Doctor Belknap, the consultant, from Prairie City, if he had ever used emetine hydrochloride hypodermically for hemorrhage, and he answered that he had done so once, in a case of pulmonary hemorrhage, and that it had acted so promptly that it scared him.

J. CAMPBELL-MARTIN.

Dayville, Ore.

[This is an interesting instance of the promptness with which emetine hydrochloride sometimes will act in arresting even very alarming hemorrhages.—Ed.]

CHRONIC DIARRHEA TREATED WITH EMETINE

In June, 1915, a young man came to me complaining of having chronic diarrhea, and, after looking him over, I decided that this was a good case for emetine. I told him that, if he would come back in about four days, I would have the medicine that I

wanted to use. At the appointed time, I started him on the emetine-course, administering, hypodermically, a dose in the morning, and another one the same day in the evening. I continued this treatment for three days, after which I gave him only one dose a day, until he had received twelve doses in all.

After he had the fifth dose, his bowel-movements began to check up, and by the time he had the last dose he had to take a dose of castor-oil to get his bowels to move. After this, his stools became normal, and they have been moving once or twice daily since then. Digestion now is good and the man has gained 40 pounds in weight in about six months. This man had been a sufferer for over five years before I put him on the emetine. Believe me, this cured man is as happy as happy can be.

Having had such good results in this instance, made me think of another sufferer from chronic diarrhea, and, so, I told that man about the results I had with the former patient. After talking the matter over with him, he decided to try the cure. I sent for another supply of ampules of emetine, using it the same as for the other patient.

To my great surprise and pleasure, I obtained equally good results from the alkaloid in this case, and the man is cured. This man has had the trouble for forty years; got it in the war; now he is rid of it. He also has gained flesh since he has been cured. I treated this man ten months ago, and see him every now and then, and he is always talking about the "wonderful cure."

W. R. SCHOEN.

Gordonville, Mo.

[We have referred to Doctor Schoen's experience in an editorial, published on page 772, which see.—Ed.]

ANOTHER CASE OF HYSTERIA

I was much interested in the cases of hysteria reported by Doctors Bennett and Spradling in the August number of *CLINICAL MEDICINE*. Hysteria is certainly a "disease-animal of variegated hue," as you put it in commenting on these cases. One such instance that came under my observation a few years ago will bear out the truth of that statement.

One hot summer afternoon, I received a hurryup call to see a woman who, the messenger told me, had suddenly fallen unconscious out of her chair while she was talking

with her husband. Upon arriving, I was informed that she had not shown any symptom of returning consciousness since she had fallen and lay on the bed, having made neither movement nor sound.

I found the patient lying on her back, with eyes wide open and gazing at the ceiling. The pupils were normal in size and regular. Touching the conjunctiva elicited no reflex of the lids. I could detect no evidence of paralysis in her limbs. Pulse, temperature, and respiration were normal. The woman was about 25 years of age and the mother of three children, and her general health was good. She paid no attention to questions addressed to her; pinching the skin and pricking it with a pin elicited no response.

Here was a case that certainly was puzzling. I knew something of the patient's personal and family history, however. The family has a somewhat neurotic history, one member being an inmate of an institution for feeble-minded, and she herself is considered by her husband to be "off," to some extent, in religious matters. She is a firm believer in the "laying-on of hands" and in the rubbing-on of what she calls "holy oils"—oils that have been blessed by the elders of the church to which she belongs.

Being aware of this neurotic tendency, I suspected either a shock or else plain hysteria, and, accordingly, questioned the husband closely as to the onset of the attack. He then told me that she had been very desirous of going to Council Bluffs, to visit some relatives there, but that he had objected. Then, while they were arguing the matter, she suddenly keeled over without warning.

Taking my cue from what the husband told me, I decided to try the effect of a little "mental" treatment. So, I fished out from my medicine-case a few placebo tablets and handed them to the husband, telling him to give one to his wife occasionally, at the same time saying, in the woman's hearing, that there was nothing serious in her condition—"but," I added, "if she doesn't come to very soon, she will not be able to go to Council Bluffs." I repeated my directions and the warning before leaving the patient's presence, and then departed. I had barely climbed into my automobile, however, when the husband came running out of the house. "Oh, doc, doc," he called, "she's all right now; she is sitting up and can talk!"

I have sometimes thought that this case would have been a great one for our Christian Science friends to have got a hold of. They

would, most assuredly, have accomplished a miraculous cure.

F. S. SPEARMAN.

Whiting, Ia.

INCIDENTS FROM A DOCTOR'S PRACTICE

The August number of the *Critic and Guide* is unusually interesting. The editorials are powerful. Take for instance the following, entitled "Incidents from a Doctor's Practice":

A very tiring, anything but pleasant, and but poorly remunerative day. It was 9 p. m. when he could have his cold dinner hurriedly, then he had to make some more calls and at 11:30, after fifteen hours' work, he could at last go to bed and stretch his tired limbs. He fell asleep instantly. Did he hear a bell or did he just dream? Perfect silence, and for a moment he sweetly hopes, that he just dreamed or imagined that the bell rang. But in a few moments there is a loud, persistent, unmistakable ring—the sound reverberating throughout the house. With a sinking of his heart he recognizes that he is wanted, that he must leave his warm bed, and go. He goes to the window. "Oh, doctor, please come at once; baby is sick." He looks at the clock. It is three. "Couldn't you wait until morning?" "Oh, no, you must come at once. The baby can't breathe; it is choking."—He hates to go. But *noblesse oblige*. He dresses hurriedly, and sails forth with the frantic mother.

They walk fast for about ten blocks, then it is three flights up—he can hardly follow the mother—and when he arrives at the poorly but neatly furnished rooms, illuminated by a smoky kerosene lamp, he finds the child, breathing stertorously, and shaken by violent, frequent convulsions. The child's struggles are pitiful to see, and it seems on the point of strangling. Every stertorous breath threatens to be the last one. There is not time for a laborious examination, but the thermometer shows a temperature of 106°. The doctor takes off his coat, rolls up his sleeves and begins to work. He gives the little boy a prolonged cold enema, which brings away a lot of undigested material puts him in a luke-warm bath, gives him an emetic, and then a mild antipyretic powder, and after working for an hour he has the satisfaction of seeing the child calm down and finally fall into a peaceful sleep. The mother's face, drawn and careworn only a little while before, is now calm, with a faint suspicion of a smile over it. The father, who during all that time was smoking, in a sullen mood, also seemed to be pleased. And the doctor was highly pleased.

"An unpleasant, difficult profession medicine is," he mused, "but now and then we have the satisfaction of *knowing* that we have accomplished some actual good, have relieved pain, removed anxiety, restored health and saved life. And how valuable some lives may prove to humanity." And as he mused thus, while packing his grip and putting on his overcoat, he heard a question which acted on him like a sudden dash of cold water. The question asked by the mother was: "How much?" It seemed to him so incongruous, so unexpected, so out of place. Service like this, he could

not help thinking, should not be paid by money. It cheapens it and vulgarizes it. The state or the community should support the doctor, and support him well. "How much?" How horrid, and if he ~~was~~ to be paid, then his services, which included a broken night's sleep, which will make him tired and inefficient for the next day, were worth at least fifty dollars. But he looked at the rooms, at the mother and the father, and said "Three dollars."—"All right. I will bring the money around Saturday night."

But she did not. Neither that Saturday, nor any other Saturday. The doctor thinks the mother would have been glad to pay, but the father's wages were small, and after paying up the grocer and the butcher, and spending a little on tobacco and beer, the father did not have any money left for the doctor. And the doctor has enough anyway. The good people don't know that some doctors have relatively less than the poorest workingman—have a harder task to make ends meet.

THE CAUSE OF PELLAGRA, AS SEEN BY A VETERAN

I see so much lately in regard to pellagra, written by men who, as it seems to me, simply want to get their names into some medical journal, that I felt that I would hold back and say nothing; however, at last I have come to the conclusion that I am doing wrong to remain still any longer. And right here I want to say that I have seen and treated and have handled more pellagra-cases than has any surgeon or physician now living in the United States and, possibly, in the world. I had sixty-eight surgeons under me at the celebrated prison at Andersonville, Georgia, during the war between the states, all of whom are dead now, I being the only one left. I have seen more pellagra in forty-eight hours than any physician in the United States ever saw in his life or ever will see. We had nearly 10 thousand deaths at Andersonville from pellagra, and we investigated the disease in every way; and I maintain that there are more misleading articles published as to the cause of it than concerning any other disease that I know anything about.

During the summer of 1864, we had 36,000 prisoners in Andersonville prison, which was built to hold only 5000. So, you can readily see the crowded condition in the prison. I arrived there on the 4th of July, 1864, to take charge of the hospital. Shortly afterward, Professor Joseph Jones (who died at New Orleans a few years ago) was sent there, to see if we could make any discoveries as to the cause of the disease. We examined everything that we could conceive as being the possible cause, and finally we came to the conclusion that the whole thing was

produced through the insanitary and crowded condition of the prison.

Three regiments of Confederates were guarding the prisoners, and not one of them ever had pellagra. Captain Wirz, General Winder, and I had from 300 to 500 prisoners out on parole, and not a single case ever occurred outside of the prison, after the men had been out of the prison a week or ten days. No surgeon or any one on the outside ever took the disease—yet, we all had to eat exactly the same diet—every medical officer and all had the same to eat. We could not get anything else, so, you can readily see that, if it had been corn-meal and bad provisions, the men on the outside would have had the disease, precisely as those inside of the prison.

Now, whenever you see an article, saying that the disease is produced by bad diet, you can rest assured that the writer of it did not know what he was writing about. I see in the August number of CLINICAL MEDICINE statements that are entirely wrong and misleading. Now, we have had quite a number of cases, and almost every one of the victims has been among the very best citizens we have, and some of the wealthiest. So, you can see that it cannot be caused by bad diet. The poorest people in this part of the country have had no pellagra among them at all.

I don't believe that the cause of pellagra has ever been discovered as yet, but, when it is, it will be found to be a microbe, or something of that nature, Doctor Goldberger's theory to the contrary notwithstanding. I am a young physician yet—only 82 years old, and have practiced medicine only fifty-eight years.

W. J. W. KERR.

Corsicana, Tex.

[Doctor Kerr's letter is very interesting, and his story of medical experiences at Andersonville would certainly make good reading. He should prepare it while he is still "young." We were under the impression that the prevailing illness at Andersonville was scurvy. It was so classified in the medical records of that day, but, of course, pellagra was not then known, so we suspect that Doctor Kerr's diagnosis is the correct one, even though it has been made a trifle late.

We decline to be inveigled into a defense of the Goldberger theory as to the etiology of pellagra; indeed, we are inclined to be of Doctor Kerr's opinion, since the evidence submitted does not seem to us convincing. For the evidence, see comment on Doctor

Hilburn's article, page 695, August issue.—
Ed.]

THE MENACE OF TUBERCULOSIS

Down here among the Indians, we have many victims of tuberculosis. Persons thus afflicted come into town to trade, to see the doctor or just to pass away time, perhaps in the pool-hall. These men expectorate on the floors of the public establishments and on the sidewalks, the dried sputa becoming a possible cause of infection to every susceptible individual. But, what I wish to bring out is: Are scarlet-fever, smallpox, measles, and diphtheria more dangerous, more to be dreaded than tuberculosis?

My answer is, No. All these infectious diseases may be said to be less dangerous, because they are more amenable to treatment and less insidious in their attack. Yet, we quarantine all these patients and put them under more or less compulsory police regulation and treatment.

Why, then, in the name of common sense and of humanity, do we let that other, the more dangerous disease, go loose, untrammelled, unguarded?

Is it because there are so many nice, rich, influential *white* people also afflicted? What difference should that make?

Three years ago, I went to some of our state legislators and put this question up to them, and asked for some legislation that might start the way to control the spread of tuberculosis in our state, at least; and, while they all confessed the need, they all objected that it would be "class legislation." That came primarily because I had been talking about the Indians. But, when the attempt was made to include the whole population under one head in this respect, there was nothing to say, except, "We'll think about it." And that was the end, so far.

If there is any virtue in sanitary police control of infectious diseases, then there ought to be some way to get a statewide, nationwide law that would be as protective with regard to tuberculosis as to any other of the dangerous diseases.

If a Vanderbilt had a mad dog, it would be shot. If an Astor had smallpox, he would be quarantined. But, if he had tuberculosis—what then? It may be that there are people, few and seldom seen, who would destroy all possible causes of infection if they were sick. But, the consumptive often will not admit that he has tuberculosis, until possibly he has infected thousands, while others know that

he needs to be under proper control and medical care.

Why are we so backward about this class of patients? Has not the medical fraternity enough influence to secure the passage of laws that will protect the innocent from this as well as from other, less dangerous, diseases? All tuberculosis patients ought to be compelled either to remain at home under proper care and healthful conditions or, if this be not possible at home, should be sent to some suitable sanatorium, where they can have a chance to get well without spreading the disease. Certainly, there is no hope of victory until we can control the patient. Who knows how to bring this to pass?

C. A. FREEMAN.

Geary, Okla.

[Undoubtedly tuberculosis should be a quarantinable disease in some communities. However, it isn't the patient himself who is a source of danger—it is his sputum. As Doctor Freeman has so clearly pointed out, it is the indiscriminate spitter who spreads tuberculosis. If we can "get" him, it will not be necessary to saddle everybody with a rigid quarantine. There ought to be a campaign of education, supported by rigidly enforced sanitary legislation.—Ed.]

HARDSHIPS IMPOSED UPON FOREIGN PRACTITIONERS BY THE ANTI- NARCOTIC LAW

Since the passage of the act forbidding the transportation of poisonous drugs through the United States mails, a very severe hardship has been imposed upon all of us doctors, medical missionaries, and dentists in Central America. Now, we cannot get H-M-C, aconitine, heroin, physostigmine or any of the potent remedies so necessary in our daily practice. We cannot get them by parcel post, and no express company is operating between the States and these Central American countries; thus, the only avenue left for us is by freight. But freight is very slow and uncertain; to some ports it comes but once a month, although to a few it comes twice a month. Thus, when we need a few tubes of hypodermic tablets, it seems absurd to think of being forced to make a freight shipment of it—considering the great expense of the consular invoice, the freight costs the same as for 100 pounds, the time consumed. It is fearful! But, the time wasted is the most important factor.

Yet, there is no other avenue open to us in Central America.

Is it not a great injustice that the States should permit legislation that so completely ties our hands and makes it practically impossible for us to get the actually needed remedies with which to treat our patients? Why should the mail prohibition be placed on foreign shipments? The parcel-post system is a very convenient means for us to bring to us our requisite supplies of tablets, and the like, as needed. It insures our prompt receipt of supplies, and we may get them frequently, just as wanted. Through the slow method of freight shipments, and the even much longer delay often involved in getting goods passed through the customs offices in these countries, there often is caused much loss from deterioration. More than once, I have had to wait as long as four or even six months before getting my freight shipment.

Can you not, and will you not, take an interest in this matter in behalf of us United States citizens who are practicing medicine, surgery, and dentistry in these foreign countries? Will you not use your influence to get the restriction removed from the shipment of these "prohibited" drugs in parcel post to foreign countries? If you will take an active interest in this matter and can succeed in getting the parcel-post system opened to us in foreign countries again, you not only will be doing a great good for us all, as professional men, but will confer a benefit to the cause of humanity in the foreign parts of the world, and there will be a great company who will rise up and call you blessed.

A. J. HETHERINGTON.

Guatemala City, Guatemala, C. A.

[We quite agree with Doctor Hetherington as to the inconvenience and injustice of which he so forcefully complains. As a matter of fact, we already are doing everything in our power to secure a rational revision of the post-office regulations, so as to permit dealers to mail these necessary tools of the doctor's trade to physicians in all parts of the world at a minimum of inconvenience. Thus far, however, we have been unable to secure any relief whatever from the postoffice department, although every effort has been made by the various associations of drug manufacturers in this country to prevail upon the officials to modify the rules.

We are informed that it will be necessary to secure the passage of a special law by congress to give relief. A bill of this kind has been prepared and, we believe, has been

introduced, but the pressure of administration legislation, including bills for the army and navy increase, have occupied the attention of congress, to the exclusion of virtually everything else.

We bring this matter to the attention of the medical profession of the United States, so that they may aid us in our efforts to secure a modification of existing legislation and regulations. The present laws regulating the sale of poisonous drugs are still in a decidedly empirical stage, and it is unavoidable that during this period much hardship must be suffered by individuals. In time, the problem undoubtedly will be solved satisfactorily.—Ed.]

THE JOYOUS LIFE OF THE COUNTRY DOCTOR

I have lately been a high-water victim. I lost all my buggy-equipment in Salt Creek a few weeks ago; and my grips are still under seven feet of cold water. But I fared better than my neighbor, Doctor Neffner, of Weisburg, who lost his life in Tanner's Creek but a few weeks before.

Fortunately, I had a driver with me who weighs over 200 pounds, so, our combined weights kept the buggy on the bottom. The horses were in over their backs, with only the heads sticking out of the water. It was broad daylight and we had crossed the same ford only about an hour and a half before; but it had risen in the meantime, and we did not recognize the danger from the other bank. I have run many narrow risks, but this was the closest I ever came to the "chilly waters."

The roads have been impassable for automobile traffic till just within the last few days. I sat back of a team of horses for three months. I hired a driver and got into a closed buggy. I have done a banner winter's work, but I sometimes feel like asking the question, "Is it worth the hazard, after all?" But I keep on working just the same.

Excuse this letter. It is given to you as a gleanings from the great army of hard-working country doctors, who have made your success possible. I know that I am addressing friends.

PHILIP L. MULL.

Oldenburg, Ind.

[A letter like this should be a revelation to many a city doctor, who knows but little of the difficulties of country practice. It brings

back memories to me. Does it to you, brother?—Ed.]

A GOLDEN WEDDING

I have just received a card announcing the celebration of the fiftieth anniversary of the wedding of Dr. George T. Netherton and wife, of Gallatin, Missouri. At the earnest request of their two sons, Drs. C. O. and E. J. Netherton, celebration was arranged to be held in Dockery Park, of that town. There was a lunch, good music, and inspiring talks by a number of speakers.

Doctor Netherton is one of our oldest and best friends and a reader of this journal for many years. We regret that we could not have been present on this occasion to assist in doing to him and his good wife the honor they deserve.

ALCOHOL AS A REMEDY: A REJOINDER TO DOCTOR BOWERS

I have been somewhat interested in Doctor Bowers' article which appeared in the July number; however, it strikes me that the Doctor either is wilfully prejudiced or wofully ignorant of the status of the various "cerebral stimulants," among the first of which is alcohol. He says: "The physiological stimulant influence exerted by alcohol upon one dangerously ill might on occasion weight the scales of life in such a one's favor. But, if this patient had the same faith—as many have—in an amulet, in pills made of bread or any other inert or innocuous substance or treatment, he would derive from it the same or even greater benefit."

What rot! In the first place, a person dangerously ill is not supposed to know what is being administered; and "faith" is not a factor other than that which the patient has in his medical attendant. Doctor Bowers evidently is one of those who believe that, if you but have faith, "even as a grain of mustard," you shall move mountains. However, you can not move even a mustard-seed without applying some physical force. But, Doctor Bowers says later, "alcohol is not a stimulant." Does he not know that all narcotics are stimulants in their first action, and that, if properly controlled, they will exert that stimulant effect alone?

Fifty years ago, I wrote a thesis on cerebral stimulants, and I find that the first article then considered was alcohol. My introduction there reads:

"This class of stimulants, termed narcotics by most writers, acts chiefly upon the brain, though at the same time influencing both the circulation and the spinal nervous system. Like all other stimulants, their primary impression is followed by a proportionate degree of depression, which becomes excessive and dangerous when the dose has been very large."

In therapeutic doses, alcohol is both stimulant and diaphoretic, and its action upon the circulation is marked. I say this from actual experience in many serious cases, notably of pneumonia, where the pulse has been threadlike, hard, and fast. After a full dose of whisky, say, 2 fluid ounces well diluted with water, I have tested that same pulse in less than ten minutes and found it full and soft, with the further effect of reducing the temperature and producing a moist condition of the skin.

As an antiseptic in the treatment of wounds of every description—contused, lacerated, incised or punctured—alcohol stands without a rival; nor have I ever heard this assertion questioned, although it has been the more recent practice to use all sorts of advertised and even proprietary antiseptics, often to the harm of the patient, but to the pecuniary benefit of the manufacturer. Surgeons, at present, seem to have gone "daft" on the subject of tincture of iodine for dressing wounds; but, iodine is soluble only in alcohol, and whatever good results is due to the alcohol, while the iodine is irritant and caustic and indicated only, should necrosis of the tissues threaten. If alcohol alone is used as a dressing, necrosis need not be apprehended—and I speak from half a century of experience, military and civil. In a meeting of military surgeons, held in Baltimore some time ago, a prominent surgeon offered a resolution declaring that alcohol is a poison and should not be used under any circumstance. At least this was the gist of it. After some discussion, pro upon the part of the introducer and con on the part of several present, the surgeon asked permission to withdraw his resolution; which was granted without a dissenting voice.

Doctor Bowers accuses alcohol of being largely responsible for catarrh of the stomach. I must take issue with him on this point, inasmuch as I can cite two examples in my own family contradicting this assertion. My own father suffered from catarrh of the stomach and did not and could not use alcoholics at all. My wife has suffered for years from catarrh of the stomach, and she

has never used alcohol either as a medicine or as a beverage.

Now just a little family history and I am done. My grandmother's father on my father's side drank nearly a quart daily of apple-brandy made by myself and smoked a pipe almost incessantly. He was a vigorous man and had no sickness, except for an occasional attack of gout. He lived to the age of 108 years, and died of pneumonia induced by exposure. My paternal grandfather was not a drinker, in fact, was a total abstainer; nevertheless, he was never without some acute trouble and died at the relatively early age of 63 years. My father resembled his father in every respect (5 feet 6 inches in height, and between 170 and 185 pounds in weight), was a total abstainer, suffered from catarrh of the stomach and other ills, and died from apoplexy at the age of 63. My mother was of small stature, quick and nervous in movement. She had five children, all of whom, except myself, died in infancy. She was a lover of good wine, and she indulged in it, sparingly, all her life. She was healthy and came of a longlived family. She died of sarcoma of the liver at the age of 76.

I myself resemble my great-grandfather in appearance, being 5 feet 10 inches in height, and averaging 165 pounds in weight. I have had only one attack of sickness—an ascending infection of the kidney, due to an infected catheter used for an acute retention of urine, which was caused by lack of opportunity to empty the bladder at the time. I have drank whisky almost daily for sixty years, yet, at the age of 76, I now am strong and healthy. Two years ago, I underwent an operation for epithelioma of the tongue, was in the hospital ten days, recovered perfectly, and no signs indicate a return of the disease at this time.

I am a believer in alcohol, as I am in all the good things which God has given us in such profusion. On the other hand, I decry its abuse, as I do that of any other good thing. And, from the Christian standpoint, St. John gives the world an example, in the second chapter in his gospel, by telling what his Master did at the marriage of Cana. Temperance and moderation in all things is one of the strongest items in my creed.

W. T. THACKERAY.

Fowlerton, Tex.

[Doctor Thackeray is an old and dear friend and former colleague of the editorial staff of CLINICAL MEDICINE, and so we are

very glad to hear from him and to give him an opportunity to express his views on the alcohol question. Yet we cannot agree with him. While we can admit that the alcoholics have their uses, we are in the main in accord with Doctor Bowers. The harm done by whisky far outweighs any good it may do. We have explained our reasons for this opinion so often that it is hardly necessary to go into the details again at this time.—ED.]

A BOOKLET ABOUT INFANTILE PARALYSIS

We have just received a copy of a pamphlet, issued by the Chicago Department of Health, concerning acute anterior poliomyelitis. The foreword is written by Dr. John Dill Robertson, commissioner of health, while the body of the text contains a discussion of "the nature, manner of conveyance, and means of prevention of infantile paralysis," prepared by Dr. Simon Flexner, director of laboratories of The Rockefeller Institute for Medical Research.

We have no doubt that Commissioner Robertson will be very glad to send a copy of this pamphlet to anyone asking for it. Enclose postage stamps.

A GOOD OPENING IN MINNESOTA

We know of an excellent location in Minnesota for a homeopathic physician. If any reader of CLINICAL MEDICINE is interested, we suggest that he write us at once.

DEPARTMENT OF EXTENSION

From time to time we have published in this department little articles for distribution by physicians among their patients. These articles are for the purpose of extending scientific medical knowledge among the laity. Some of the articles serve the physician by saving his time, as, for instance, the leaflet on disinfection of the sick-room. Others serve him by increasing his power to get his instructions accurately carried out, as, for instance, the pamphlet on the management of pregnancy.

The present article will, we trust, be useful in relieving the layman's mind regarding the danger of acute anterior poliomyelitis, while gratifying his craving for information concerning a topic that of late occupies a place on the front page of the newspapers.

We grant permission to any physician to reprint this article for his own use. If we

receive requests for reprints, we will, ourselves, procure them and supply them at approximately cost.

NATURE AND PREVENTION OF INFANTILE PARALYSIS

Infantile paralysis probably has afflicted human flesh for many centuries. The disease was recognized as a distinct malady by the German observer von Heine, who published a paper in 1840 describing this form as one form of paralysis. The disease usually affects children, although it may occur in grown persons. It often causes complete loss of use of one or more limbs, and sometimes paralyzes the muscles involved in respiration, thus causing death. When the patient recovers, there is usually some improvement in the paralysis during the first six months; whatever damage remains after twelve months is apt to continue during life. The paralyzed limb is always limp and flaccid, and usually more or less bluish from poor circulation.

Infantile paralysis, or poliomyelitis, as it is called in scientific language, is an acute infectious disease. The contagious agent lives in the mucous membrane which lines the nose and mouth, in the gray substance of the spinal cord, and possibly elsewhere in the body. There is no reason to believe that the germ is ever found in any of the lower animals. The virus or poison enters the human body through the nose or mouth and in some way penetrates to the spinal cord. The poison has a peculiar power to damage the large cells in the spinal cord which act as electric batteries for stimulating the muscles to action. Some of the large cells are destroyed as a result of the poison, and once destroyed can never be replaced. The muscles controlled by any group of these large nerve cells can never be used voluntarily after the destruction of this group of nerve cells. Always a certain number of these cells is damaged temporarily, and they may recover, causing the partial restoration often seen during the first six months after an attack.

During the early weeks after an attack, manipulation and electric stimulation may delay or lessen the recovery of the nerve cells, and hence the patient should await the time when the doctor thinks it best to use any form of treatment. At all times it is best to follow the guidance of a physician of known competence and character; otherwise one may come under the evil influence of advertisers and schemers who make false promises in order to gain the confidence of the patients' parents and friends. It is a good rule to accept medical advice from no one except the family physician, or those whom he recommends.

The infectious agent or the virus of infantile paralysis leaves the system with the discharges of the nose, throat, kidneys, and bowels. The patient should accordingly be isolated and the same precautions observed as in scarlet fever.

To prevent the spread of this disease is rendered specially difficult by the fact that the virus or germ of the disease often finds a lodgement in the nasal passages of the healthy persons who come in contact with the patient. Such healthy persons may harbor the germ for weeks without themselves showing any signs. Persons thus carrying a disease germ are known as disease carriers. They are themselves healthy, but can transmit the disease to other susceptible persons with whom they come in contact. Infantile paralysis occurring in persons who have not been near any one suffering from the disease can usually be ascribed to disease carriers. Another factor aiding the spread of in-

fantile paralysis is the so-called abortive case. Some children have the disease, but do not develop the paralysis, and hence the true identity of their malady is not discovered. Naturally a diagnosis of some other malady may be made, such as "teething," or "biliousness," and no precaution is then taken to prevent the spread of the disease.

There is no known way to explain the so-called sporadic cases of infantile paralysis, that is, the scattering simple cases, except on the assumption of healthy persons who act as carriers of the disease. By this assumption, the occurrence of scattering sporadic cases is easily understood, but not easily prevented.

When an epidemic of infantile paralysis appears, children can be protected by keeping them safe at home, and by regarding with suspicion every person or thing that comes on the premises. Any members of the household who have been out on the streets, should change clothing and wash face and hands before touching the children. The milk should be pasteurized, and all foods cooked before being placed on the table.

In order to prevent contamination from the persons who have been out in public places, all door knobs, furniture, and woodwork should be gone over daily with a disinfectant solution containing seven Grams of corrosive sublimate (1 large antiseptic tablet) to the quart of water. The solution should of course be kept away from children. Before sweeping, the floor should be sprinkled with moistened sawdust or moistened bits of paper, or one of the various preparations sold for the purpose of preventing dust.

If the above precautions are carried out by a household, the disease is likely to be excluded. Infantile paralysis has never in historic times affected a very high proportion of the children in any community. There is a substantial percentage of safety in favor of health. Scores of small epidemics have passed over the various communities in the past decade, but no one of them has ever lighted up a devastating scourge. It is unlikely that present conditions are favorable to an unlimited spread of the disease. The householder therefore who relies on his family physician, and obeys the simple rules mentioned above should view the future with equanimity.

THE MEETING OF THE MEDICAL SOCIETY OF THE MISSOURI VALLEY

We learn from our friend Dr. Charles Wood Fassett, secretary of the association, that the Medical Society of the Missouri Valley will meet in Omaha on Thursday and Friday, September 21 and 22. The president is Dr. John P. Lord. The meeting of this association will be held at the Hotel Fontenelle. We understand that an excellent program, limited to twenty papers, will be presented. Every physician who lives anywhere near Omaha should plan to attend this meeting.

INFANTILE PARALYSIS: HINTS AS TO ITS TREATMENT

There is so much talk about infantile paralysis these days, that naturally one thinks we

ought to be getting something sensible out of it all.

Recently the Buchanan County Medical Society held a special meeting at St. Joseph, at which this disease was the theme for discussion. Indefinite quarantine and all sorts of precautions were recommended. And that is all right; for, I believe we should be careful not to let the people spread the contagion unchecked. However, I think we are going too far. This idea, that anyone carrying the contagion or who has been associating with a child suffering from infantile paralysis may harbor the germs for months or an indefinite period of time, would put us in a bad way, if generally accepted.

I think that, so long as we can not positively demonstrate that a case of infantile paralysis is traceable to the infection of one having suffered from the disease, we should not preach cocksure doctrines and frighten people, with the result that we cannot get neighbors to take charge of or help care for a child; especially when we have at command means by which we can prevent the infection of exposed persons, and also can cure most cases if taken rightly and in time.

The various students of this disease nearly all agree that it is infectious, the organisms being carried through the lymphatics. That it is due in part to taking cold, wrong feeding, indigestion, and the like, there can be little doubt. It is brought on in about the same ways as are meningitis, tonsillitis, pharyngitis, and so on.

Parents should be instructed to call the physician early—as soon as the child shows symptoms of indigestion, a cold, coryza, loss of appetite, and drowsiness, especially when these symptoms are accompanied by fever, constipation, diarrhea, and forms of indisposition.

The treatment should, first of all, consist in proper elimination. Start with three or four divided doses of calomel; then, in one or one and a half hours after the last dose of calomel, begin with some good saline laxative, also in small doses, say, every half hour, until the bowels have moved three or four times. Or, if the bowels do not move, follow this up with an enema of warm water.

A good plan may be to follow this the next day with 2 drams of castor-oil to which 5 drops of oil of turpentine and 10 or 12 drops of glycerin have been added. After this, continue to give a small dose of the saline laxative, say, three or four times a day, to keep the bowels loose, and between times the sulphocarbolates. An effervescent saline lax-

ative may be dissolved in water, well sugared, and given in teaspoonful doses. This will keep down the fever without depressing the heart. The dosimetric trinity is useful at first to sustain the heart. Tonics may be in place later on. Calcium hypophosphite compound will be of value.

First of all, forbid all cold drinks and improper foods, and do not feed anything as long as the child has no appetite.

But—speak of appetite! Most of these little sufferers are not hungry, but thirsty. They still are on the breast or on the bottle, and they cannot tell the mother whether it is thirst or hunger from which they are suffering; hence, they are put to the breast or given the bottle. This is all wrong. The first thing should be, to take the sick baby off the breast and give it no milk in any form. Instead, give all the warm water that is wanted; better, still, barley-water, rather weak, but everything warm.

There is one other point that I think is worth mentioning. The dispensing doctor has the advantage over the prescribing doctor in these cases. To illustrate: I was called to see a youngster of 30 months who had a very acute attack of gastroenteritis, and beginning paralysis. I will not call it a case of poliomyelitis this time, because the child got well.

The family doctor had been called in time, but the child grew worse so fast that the parents became alarmed, and, as their physician had to go into the country, they called me. The child was in a bad way. The doctor, before leaving, had given them prescriptions for several kinds of medicine. The instructions as to how to manage the child seemed vague to the parents. I gave the child what it needed from time to time during the next two or three hours, until I could be sure the medicine would show effect, and instructed the parents and nurse how to proceed. We had a hard fight during four or five days and nights, but we saved the child; having the medicine at hand and using it regardless of expense, besides giving proper instructions to the attendants, to which final success may be ascribed.

R. WILLMAN.

St. Joseph, Mo.

[May I suggest that, in connection with Doctor Willman's article, the editorial on acute anterior poliomyelitis (August issue of this journal, page 640) be read again. Also read the article in the What Others Are Doing

Department, page 766, relative to the intraspinal injections of adrenalin.—Ed.]

THE CAMPERS' "LYRE"—STRIKE IT AGAIN DUNGAN

My outing which I have enjoyed more, both in quality and quantity, than ever before, was taken 12 miles from Bozeman, Montana. Had it not been for the thoughtfulness of Eugene White, my guide, in disposing of a stumbling block, in the form of a railroad ticket, which the conductor had punched off for ten days, instead of thirty days, two-thirds of my vacation would likely have been lost. Mr. White, after casually informing me that we had that day committed burglary and made false pretenses, went on to give the cheerful details, as follows:

You see, I knowed you'd like to stay
This mornin' when you walks away,
But still you thinks you've got to go,
Because your ticket has it so.
Wall, while I'm washin' up a sock
A feller asks, am I the "doc"—
He's heard your ticket is fer sale;
An' pulls a hefty wad of kale
And says, will I take ten fer it?
An' I looks up from where I sits
And makes reply, "I am an' will."
Then, while he's searchin' out a bill,
I gits your ticket an' he goes
Bestowin' it amongst his cloes.
An' then I thinks I better clear
Fer town an' git the grub up here.
I goes with Charley, an' as he
Is aimin' to start back at three
I gits it in the wagon-bed
By two, reflectin' what he said
'Bout comin' off an' leavin' me
If I wan't right on hand at three.
Well, while I'm wastin' round the spot
That same guy comes up on the trot
An' says he's got a job since when
He buys your ticket here for ten—
His job will net him five a day.
An' now he's anxious fer to stay,
An', givin' me a pleasant laugh,
He says he'll let 'er go fer half—
I takes my watch out, thinkin', see!
Your ticket was due out at three.
I notes the time an' buys it back
An' makes a run to jump a hack,
Intendin' fer to ketch that train
An' have your ticket punched again
So you could stay a month or more,
When down the street there comes a roar—
"Doc! Doc!", I hears, an' turns round just
In time to meet a cloud of dust
From which emerges one tall Swede—
Angora locks upon his head—
An' says: "Ere you de feller w'at
I hears about yust now dat's got
A ticket dat you wants to sell?"
I almost hollers "Git to —well,
Plum out of here, I don't care w'ar!"
An' then I notes him standin' thar,
Beseechin', sort o', with his eyes.
So, I unhooks a soft reply

An' gently tells this doubtful gump
Ef he buys it he's got to hump;
An', goin' on, points out that he
Will have t' make the train by three.
"Vell, mister, says the Swede, "you see,
Mine brudder vants de ticket. He
Yust lost his job an', so, he pay
You fifteen dollar right away
Ef you go oop to boardin' place,
He's dere a-lyin' on his face
Ven I come hare, beneat' de trees
I got a buggy. Yump in, please!"
I yumped in, wonderin' ef his "brudder"
That lost his job would get "an odder"
And then come back and make a roar
To sell the ticket back some more.
An' wile I wondered, we arrove
Alongside of the peaceful grove.
We went in an' located "Jim."
But when I gits an eye on him
I just sits down—yes, that is all
I had to do or, by gum, I'd fall.
I know that I'm no ravin' beaut,
But ef I look like that galoot
I hope some simple, kindly man
Will come and tap me on the can
An' use a sledge—you bet that I
Would wish to bid this earth good-bye.
Wall, Jim he rubs his eyes and yawns,
An' it is some time 'fore it dawns
On him what 'twas that other Swede
Was hammerin' into his head;
An' then he furls the ticket out,
About a yard or there-about,
An' reads what's said on it 'bout you.
"One-fifty pounds, hair none—eyes blue."
Wall! then he sizes up my face;
Some scornful, too! Amazin' grace!!
"Vell, say!" he asks the other Ike,
"You tank dat ve two looks alike?"
I bends my lightnin' stare on him
Afore he makes response to Jim,
But that one never turns a hair
When he beholds my lurid glare;
Just rolls his eyes of pinkish-blue
An' says, "He ban a twin fer you"!!
Say, pard, ef I'd a-had my gun
Them two would sure ben killed off some.
The only reason, as it is,
That they're alive is—simply biz.
Good reason, too, as you'll agree,
For you'd still had that ticket, see!
Wall, so I let the thing go thru,
Tho 'twas an awful slam on you.
He pays the fifteen; then he got.
He sees that I am sizzlin' hot,
An' I sure tremble yet, my son,
To think of what I might have done.

Thus he spoke, and proudly bent his right
To give some idea of its might;
And, picking up the sleeve on it,
Blew his biceps up a bit.
With that he dropped upon my knee
The twenty he had got for me,
And I turned back a five, to aid
The ghastly wound the Swede had made.
Ah! good old guide, I hope I may
Be with you there another day.
We all have faults, and you have yours,
And oft I've listened to your snores
Ring loud and clear throughout the glen,
And wished that just an old clothespin

Might be affix astride your nose
And render noiseless your repose.
No doubt I snored—if so, forgive,
And, so, permit the hope to live
That some sweet day I may retain
Your self and services again.

J. S. DUNGAN.

Greeley, Colo.

A DIETARY OF EASILY DIGESTED FOODS

The above headline is also the title of a little pamphlet written by Dr. Matthew Woods, of Philadelphia, and printed for the use of his patients. The dietetic directions, which are to be regulated according to the individual requirements of the patient, are interspersed interestingly with little philosophisms concerning the relative importance of right eating, if one would enjoy a happy and contented life; some also deal with a few other topics.

We do not agree with the author of this pamphlet in everything he says: but in the main it is common sense—and that passes current everywhere. Just one little criticism, though: for practical use, these pamphlets are rather too expensive. Such lists should not cost more than five or ten cents to print. Fifty cents is too high a price for anything to be given away in great number by an ordinary practitioner.

PRACTICAL POINTERS FOR SEPTEMBER

Kinney (*Med. World*) has used, since 1884, cider vinegar as an antidote to phenol, with success.

In sthenic fevers with delirium and faulty toxin elimination, veratrine will equalize the circulation and open the avenues of elimination.—Servoss, *Med. World*.

Cerebral irritation may be the cause of insomnia. Remove the cause, and hyoscine will give natural, refreshing slumber, without any serious damage to the patient, if any at all.—Servoss, *Med. World*.

We have cured headaches that glasses only helped: the aches partly due to eyestrain, partly to the cervical spinal nerves.—*Med. World*.

Infantile Paralysis: The route of infection is by way of the nose and throat mucosa, possibly the intestinal canal.—John Dill Robertson.

Nearly or all typhoid-carriers have been persons who handled food. How, but by handling the food with hands not properly washed?—Smith, *Public Health*.

Vaccinated French soldiers had typhoid fever in slight form, from which they readily recovered; the attack, in most instances, probably having been paratyphoid fever.—Grenet, *Therap. Record*.

Infantile Paralysis: Neustaedter (*N. Y. M. J.*) advises frequent spraying of the nasopharynx with a 1-percent solution of hydrogen peroxide; while healthy children are to be sprayed with 0.5-percent menthol solution in liquid paraffin. Chlorazene promises to be of great value. For pain, give bromides and chloral, in the case of infants; opiates and coal-tar preparations for adults.

As the doctor observes, in the laboratory, the marvelous changes that drugs may induce in the functioning of various organs, is there not likely to develop in him an inordinate confidence in drugs?—Swingle, *N. Y. M. J.*

In grave emergencies, acute cerebral congestion, and uremic poisoning, where a quick-acting depleting agent seems demanded, no one drug appears to be so satisfactory in its temporary manifestations as is pilocarpine.—Bush, *N. Y. M. J.*

Poliomyelitis: In the *N. Y. M. J.*, Scheinkman suggests quinine as a prophylactic—gr. $\frac{1}{2}$ to $1\frac{1}{2}$ t. i. d., for children from 0 to 15 years old. Robinson advises ammonium salicylate with caffeine; and Welden urges calcium chloride.

Under no circumstance should sodium bicarbonate be given in massive doses day in and day out, with no other thought than to render the urine alkaline.—*Amer. Med.*

Acidosis: A thorough cleansing of the alimentary tract is advisable in the beginning of treatment.—Wainwright, *Amer. Med.*

I am aware that experimentation with animals has been used to prove that cactus is inert, but on this point clinical experience seems to have demonstrated its utility.—Satterthwaite, *Internat. Clinics*.

Beasley treated a gangrenous lung abscess by intravenous injections of calcium, with iron, strychnine, and arsenic, and 2-grain doses of calcium iodide by the stomach. Recovery ensued.—*Indianapolis Med. Jour.*

Waldo says: "Put a well man on a markedly restricted diet for several days and purge him, and for some time he will be nauseated and suffer abdominal pains. Open his abdomen, and all the symptoms will be aggravated." What a very unskillful way to clear the patient's bowels before operation. Better call in consultation a *real* doctor.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

There is nothing else that human nature so dotes on as excuses to cover its own carelessness and bad management. If one can be said, for instance, to have the influenza, that seems to settle the matter; and, regardless of indiscretions in dress and health, the man thus afflicted is entitled to or seems to receive a certain amount of sympathy and consideration. Many cases of grip are traceable directly to the heedlessness or wilfulness of the victims.

"Influenza weather," so called, is nothing more nor less than bad weather. The business man thinks it not worth while to put on his overcoat when about to run across the street for a moment. So, he rushes out of a heated office into an atmosphere that demands just as much care in the way of clothing as does a genuine wintry day. If it so happens that he meets a friend at a street-corner, he may stop for a talk. Meantime the raw air is doing its malign work. When he comes back to the office, he shivers a little and says, maybe: "Whew! isn't it chilly? Raw weather, this." Then he goes about his business. But in a day or two, he is laid up, and if he escapes pneumonia or pleurisy he is fortunate, indeed. Then, when later this incautious man gets out again—if he ever does—he has a great deal to say about what a bad disease influenza is, and what a trying time he has had.

This man invited the cold and the congestion; and, not being willing to give credit to the proper cause, he says he has had the grip, and that this epidemic is a dreadful thing.

Worry is a disease. Sometimes it becomes a crime. It is something that can be overdone, an infirmity of which one must rid himself.

Modern science has brought to light nothing more curiously interesting than the fact that worry will kill. We have long known that it is a cause of much illness. The theory is a simple one. Briefly put, it amounts to this:

Worry injures beyond repair certain cells of the brain; and, the brain being the nutri-

tion-center of the body, the other organs gradually become injured, and then, when some disease of these organs or of a combination of them arises, death finally ensues.

Thus does worry kill. Insidiously, like many another disease, it creeps upon the brain, in the form of a single, constant, never-lost idea; and, as the dropping of water over a period of years will wear a groove into a stone, so does worry gradually, imperceptibly, but none the less surely, destroy the brain-cells that lead all the rest—that are, so to speak, the commanding officers of mental power, health, and motion.

Worry is one irritant at certain points, which produces little harm if it comes at intervals or irregularly. Occasional worrying the brain can cope with, but the brain is not proof against the iteration and re-iteration of one unrelieved idea of a disquieting sort. It is as if the brain were laid bare and its surface struck with a hammer very lightly every few seconds with mechanical precision, with never a sign of letup or the failure of a stroke.

Just in this way does the annoying idea, the maddening thought that will not be done away with strike or fall upon certain nerve-cells, never ceasing, and week by week diminishing the vitality of these delicate organisms that are so minute that they can be seen only under the microscope.

Yes, worry kills. But you can cure worry, and you can do it yourself. Try it, and see how well you succeed.

Throughout his whole history, man has been a fighter. He has fought the cold of the north and the heat of the tropics. He fought, in prehistoric ages, the mastodon with its huge tusks and long hair. He has fought the savage and poisonous animals of every continent and island. And all of the time he steadily fought against his brother man.

Now, he is beginning to understand, dimly, that his real battle is but just beginning. Tigers, lions, and even vicious men are insignificant enemies as compared with the invi-

ble agents of disease that slaughter wholesale.

The tiny comma-shaped bacillus of cholera killed, in one year, in Europe, under the name of "the black death," more than all the lions, tigers, and bears could kill in many centuries.

The deadliest of all foes today is the bacillus of tuberculosis, which every week kills more human beings than perished in any battle of the civil war, which in one generation destroys life and energy enough to create a new nation.

Modern prevention, as against more or less unreal oldfashioned "cure," is the great task of this day.

The most valuable property in this world is the human being.

All wealth is made real by human labor. By that labor, the cotton-boll is changed into clothing; iron ore of the hills is made to supply skeletons for city buildings; bricks, stone, lime, and sand are changed into human habitations; swamps and deserts are made over into fertile fields.

Human life is the greatest of all wealth. And human life has been wasted and neglected by our so-called civilization, as the lowest savages waste the wealth from the wreck that washes ashore.

Many congresses have been held to discuss and plan for war. Many gatherings of "great men" have devised ways and means of carrying out murder on a big scale. At such meetings for the planning of wholesale murder, the planners are honored, and the people listen eagerly for every detail, like bloodhounds waiting to be put on the scent.

Those that go to the battlefield and do the killing are rewarded with titles, pensions, blazing uniforms, and their work of murder is done with bands of music and shouts of triumph.

Scientists, protectors of human life work in silence, and their reward hitherto has been indifference and ingratitude.

The man who kills a thousand of his fellows is proclaimed a hero; one who kills half a million is called a savior of his country, and his statues cover the land.

It is time for a change—time for civilized beings to be interested in civilized work. The wholesale murderer has had his share of glory.

It is time to reward and appreciate those that save life, time to condemn those that desecrate and waste human life.

Voltaire said: "Men who are occupied in the restoration of health to other men, by the joint exertion of skill and humanity, are, above all, the great of the earth. They even partake of the divinity, since to preserve and renew is almost as noble as to create."

The world is being taught how to live and what to do to insure the most healthful conditions and guard against the inroads of disease; and the lessons cover every field. It has been pointed out that "disease is not a natural condition" and that many of the ailments with which humanity is afflicted are traceable to the gregarious instinct that brings people into groups, leads to congestion and creates surroundings favorable to disease. Add to this carelessness, ignorance or slothfulness, as they may be found in many communities, and the problem becomes most serious.

It is the beneficent purpose of science, in this age of growing kindliness (I am not now considering Europe), to teach men and women how to guard against these evils and thus, while enjoying the associations and pleasures of existence in large communities, to avoid the perils in question.

In this way, science and the social uplift movement go hand in hand, and the good results are apparent on every side. The campaign for the prevention of tuberculosis, the pure-food legislation, the efforts to protect water supplies from pollution, the destruction of various insects (such as flies, mosquitoes), that carry disease and menace human health—all these are parts of the same general crusade, and all tend to educate the people up to a knowledge of what is necessary to ward off threatened danger.

Health no longer is an individualistic nor solely a national matter. It has a primary social meaning. It has a relation to the integral life of each nation. It is a social asset. The conservation of human life and the lengthening of life mean so much more of social value to any community, while the ravages of preventable diseases make waste and tend to the deterioration of the race.

It has been estimated that thirteen years more can be added to the average length of human life by the application of principles already familiar. This, doubtless, is merely a guess, but no one who is at all familiar with the havoc wrought by preventable diseases will be disposed to believe that the estimate is an extravagant one.

But, prolongation of life is not the only result that may be anticipated if a general observance of well-established principles of health could be secured. The prevention of the misery and the economic waste that result from illness also must be considered.

A few years ago, a committee of New York specialists reported that the economic waste resulting from preventable diseases in that city reaches (if I remember correctly) the enormous total of \$40,000,000 every year. In other words, this huge sum represents the loss entailed by the citizens of New York City, through depletion of wages, expenses of medical attendance, curtailment of efficiency, and the hundred and one other ways in which illness is expensive.

In considering what has been done and what is being done to lessen deaths, one thing should not be forgotten. That is, sentiment does not play so great a part in preventing disease as do money and material things.

We feel sorry for the family across the way that becomes afflicted. We express our sympathy, as a people, in the approved manner. But we do not, as a people, take any steps to *prevent* such affliction, until we find that there is danger of its "striking home" and that, when it does "strike home," it will cost us something.

Corporations certainly are selfish aggregations, for, assuredly, there can be no sentiment in a corporation. Yet, we find the corporations of the world today doing more to stamp out disease than are individuals. This is simply, because the corporations have found that disease is expensive.

The head of a great manufacturing plant may feel the keenest sympathy for a workman who has become diseased. But, the corporation will also experience a financial loss by having any of its employees become sick. So, while the head of the corporation possibly may individually send a basket of fruit or flowers to the stricken family, the corporation, as such, proceeds to reconstruct the plant in such a way that no more of its men will get sick. The corporation, therefore—unfeeling as it is—is doing more, out of cold, selfish business interests, to prevent disease than is the kindhearted director of the same corporation as an individual.

A pretty good example of this may be seen in the activities of the insurance companies at this time. Formerly they wrote policies upon men's lives, and charged a premium

based upon their "expectancy," as it is called—then they forgot all about the insured until the death certificate came in for payment. These companies are now finding that it pays to look after the insured—to see to it that he lives just as long as it is possible for him to live. If the company can add a year to the life of each of its policy-holders, it prospers materially to that extent.

So, these same companies are building sanatoriums and employing experts and spending money, to prevent wrong living, and are doing everything they can to lengthen life. Selfish as it is, the world is profiting along with the insurance companies, and certainly no man who has been given a year of life will complain at paying an additional premium on his policy.

"An ounce of prevention is worth a pound of cure." Yes. Or, as it might well be revised, "is worth a *ton* of cure." The cure of disease has made, and is making, rapid progress. Yellow-fever, tuberculosis, rabies, venereal diseases, and others have been studied, and for many of them effectual cures have been discovered; but, while great advance has been made by scientists in these directions, prevention has not received the attention it deserves.

Despite all the pronounced cures of preventable diseases, these diseases continue to carry off their victims. It is safe to estimate that more than 90 percent of the world's mortalities is caused by these diseases or their closely related conditions. So, despite ages of research and experiments, there is yet no insurance against the death of a person who is stricken. There is, however, an insurance against illness.

The cure of diseases can be left to medical experts, but their prevention can be entrusted to the public—to an *educated* public. To the physicians belongs the cure, to the public, the prevention of diseases; that is, under the guidance and training of the students of medicine and hygiene.

If one reads all the advice given in newspapers and magazines, he might think it would require all his time to keep well. Much that appears in print, though, is of no value, is mere stuff to fill space. The real thing is, to keep clean, physically as well as morally, to follow the simple rules of life, such as we require of our finely bred animals; and to devote as much attention to the breeding of human beings as we do to the breeding of thoroughbred animals and the propagation of beautiful flowers and fine vegetables.

Among the Books

"THE INTERNATIONAL MEDICAL ANNUAL"

The International Medical Annual: A Yearbook of Treatment and Practitioner's Index. 1916. Thirty-fourth year. New York: William Wood & Co. Price \$4.00.

It always affords us pleasure to announce "The International Medical Annual," one of the best publications of its kind known to the Reviewer. The present number is no exception to the rule and contains a very fine review of the work done in all branches of medicine during the preceding year.

It is in the nature of things that the experiences bought very dearly by physicians, surgeons, and sanitarians in the present European war have received special recognition in this volume of the "Annual." To pick out just a few interesting points, we find various articles on the employment of emetine, one of the remedies at present commanding the particular attention of physicians. The question of drugs that may be employed in the place of the scarce salvarsan also has received considerable notice. In short, record may here be found of an enormous amount of clinical and laboratory-work that has been accomplished.

The Reviewer trusts that he will be permitted one suggestion in the matter of literary references. In accordance with the custom of *The Lancet* and *The British Medical Journal*, both of which publications issue two volumes a year,—to wit, vol. i and vol. ii—the volumes of other journals are frequently indicated in like manner. For instance, we find on page 81, reference 6, *Journal of the American Medical Association*, 1914, i, page 1816; when, as a matter of fact, the volume should be 63. Again, on page 93, references 4 and 5, *The American Journal of Obstetrics* is cited thus: 1915, vol. i; 1914, vol. ii. These references should, correctly, read, respectively, vol. 71 and vol. 70. It is plain that it would be of value for the work of bibliographers if the editors of the "Annual" defer to the particular methods followed by the various periodicals in numbering their volumes. The Reviewer does not mention this in criticism, but in the

hope of further improving this most excellent work.

BING: "NERVOUS DISEASES"

A Textbook of Nervous Diseases: For Students and Practicing Physicians. In Thirty Lectures. By Robert Bing, M. D. The Only Authorized Translation. Made by Charles L. Allen, M. D. New York: The Rebman Company. 1915. Price \$5.00.

Doctor Bing, the author of this textbook of nervous diseases, is favorably known for his excellent work in neurology, and also for the attractive and forceful style of his writings. His diction is clear and concise, free from unnecessary verbiage; his descriptions are lucid and graphic. The fact that this book, which is intended for the general practitioner, is written in the form of lectures enhances its value, in the Reviewer's opinion, because the rather difficult subject-matter thereby is presented in a manner more easily to be understood.

It is unfortunate that the translator attempted to reproduce the author's language as closely as possible; for, actually, the English text suffers because of the literal transcription of the German phraseology and the German construction of sentences, which often is carried to undue lengths. It is to be hoped that the entire text will be rewritten for a second edition and that this will steer clear of the main disadvantage attaching to any translation. Even with this handicap, however, the book will prove of value to the physician.

BROWN: "RECOVERY FROM TUBERCULOSIS"

Rules for Recovery from Tuberculosis: A Layman's Handbook of Treatment: By Lawrason Brown, M. D. Second edition. thoroughly revised. Philadelphia: Lea & Febiger. 1916. Price \$1.25.

A very readable book, setting forth in plain and clear language what to do and what to leave undone in order to recover from tuberculosis. An excellent book to put into the hands of the consumptive and of those in

care of him. It is free from fads and fancies, eminently sensible, and bound to accomplish much good.

HERB: "BEAUTY AND MOTHERHOOD"

Beauty and Motherhood. By Ferdinand Herb, M. D. Chicago: The Medico Press. 1915.

The author claims that "to divest child-bearing of its risks and to make it a normal process without sacrifice to beauty or injury to the mother, in health or life, it becomes necessary: first, that the young woman is healthy, strong, and well developed when entering married life; second, that the woman receives proper and scientific care during pregnancy, confinement, and the nursing-period until her previous condition of health, beauty, and physical soundness is again restored.

In accordance with these requirements, the author discusses in this treatise the means by which growing girls may be prepared for motherhood, and also those by which the health and beauty of the mother may be preserved.

OXFORD "WAR PRIMERS"

Among the many medical books that have been called forth by the special needs of physicians and surgeons serving with the British army, a series of small, handy volumes "in khaki" appeal to us on account of their concise handling of the subjects, all frills being left out. They are well adapted for emergencies, for rapid reference, and for refreshing one's memory. Mention may be made of the following volumes; all being published by The Oxford Press, of London.

Medical Hints. For the use of medical officers temporarily employed with the troupes. By J. Edward Squire. Price \$1.00.

Gunshot Injuries of Bones. By E. W. Hey Groves. Price \$1.25.

Abdominal Injuries. By Rutherford Morison and W. G. Richardson. Price \$1.00.

Injuries of Joints. By Robert Jones. Price \$1.25.

Nerve Injuries and Shock. By Wilfred Harris. Price \$1.25.

Wounds in War: Their Treatment and Results. By D'Arcy Power. Price \$1.00.

Surgery of the Head. By L. Bathe Rawling. Price \$1.25.

Wounds of the Thorax in War. By J. Keogh Murphy. Price \$1.00.

Injuries of the Eyes, Nose, Throat, and Ears. By A. M. Ramsay, J. D. Grant, H. L. Whale, and Ch. E. West. Price \$1.00.

The Stretcher-Bearer. A companion to the "R. A. M. C. Training-Book," illustrating the stretcher-bearer drill and the handling and carrying of wounded. By G. M. Dupuy. Price \$1.00.

Cerebrospinal Fever. By Thomas J. Horder. Price \$1.25.

HOLLOPETER: "HAY-FEVER"

Hay-Fever: Its Prevention and Cure. By Wm. C. Hollopeter, M. D. New York: The Funk and Wagnalls Company. Price \$1.25, net.

Hay-fever shares the fate of many other diseases the exact nature of which is not fully understood, in that an enormous literature is devoted to it. Perhaps more than any other disease has this condition been the subject of discussion by medical and nonprofessional writers alike, and remains an ever interesting topic of study. The reason for this undoubtedly lies in the fact that hay-fever is far more prevalent than has been realized, and that, moreover, it is more difficult to deal with than almost any other human ailment.

While not directly a menace to life, hay-fever nevertheless constitutes a serious affection, in that from year to year with merciless regularity it diminishes the working-capacity of its victims, and seems to be all but intractable despite the great variety of remedial measures that have been proposed for relieving and curing it.

Like nearly all other writers on the subject of hay-fever, the author—Doctor Hollopeter—of the present volume is himself a "sufferer," and, so, writes feelingly and from personal knowledge. He has gathered together all the most important facts from the existing voluminous literature upon this subject and presents clear descriptions of all therapeutic measures that have been found of any value at all. He himself has succeeded in relieving many attacks and even in preventing their occurrence by a mode of treatment designed to strengthen the nasal mucous membranes and to keep the nares scrupulously clean.

The moot question of the causes of hay-fever is discussed at great length, as is also that of contributing factors that possibly may create a predisposition. Also, many forms of treatment are described. In short, the book will be found of considerable interest, to physicians as well as lay victims. An exhaustive

bibliography, historically arranged, is appended.

"REFERENCE HANDBOOK OF THE MEDICAL SCIENCES"

A Reference Handbook of the Medical Sciences. Compiled by various writers. Third edition, completely revised and rewritten. Edited by Thomas Lathrop Stedman, A. M., M. D. Complete in 8 volumes. New York: William Wood & Co. 1916. Price, cloth, \$7.00.

The 6th volume of this magnificent work of reference includes the articles from Ligation of Arteries to Ozæna and contains many important separate treatises that are very full and complete. Among others, mention may be made, for instance, of the articles on diseases of the lungs, pulmonary tuberculosis forming a separate treatise; to the discussion of the lymphatics, of malaria, naval hygiene, the various forms of meningitis, occupational diseases, besides a great variety of others. The subject of medical licensing boards is dealt with at considerable length and includes the regulations in force in countries other than the United States. Of particular interest to the Reviewer, are the instructive articles on the history of medicine and of its various disciplines, as, for instance, obstetrics; so, also, the biographies of various medical men of note. Incidentally, we observe that in the article on Pierre Charles Alexandre Louis there is no reference to that author's "*Recherches sur la Phthisie*"—a work first published in 1825, and in a second edition in 1843—which was not without influence upon the study of tuberculosis, since it supported the views of Laennec against the attacks of Broussais and others.

This reference handbook not alone is of great interest to the student, but it presents to the practicing physician the related subjects in condensed form, and, yet, sufficiently detailed to be of very decided service in his daily work. The undertaking of the publishers deserves the cordial support of the medical profession.

FISHER AND FISK: "HOW TO LIVE"

How to Live. Rules for Healthful Living Based on Modern Science. Authorized by and prepared in collaboration with the Hygiene Reference Board of the Life Extension Institute, Inc. By Irving Fisher and Eugene Lyman Fisk, M. D. New York:

The Funk and Wagnalls Company. 1915. Price \$1.00, net.

"The purpose of this book is, to spread knowledge of individual hygiene, and thus to promote the aims of the Life Extension Institute. These may be summarized briefly as: (1) to provide the individual and the physician with the latest and best conclusions on individual hygiene; (2) to ascertain the exact and special needs of the individual through periodic health examinations; (3) to induce all persons who are found to be in need of medical attention to visit their physicians."

The Reviewer feels that nothing that he could say would express the purpose of the volume before him as well as the foregoing paragraph quoted from the preface. The book is written in substantiation of the feeling, which constantly is gaining ground, that the highest duty of the physician is, to prevent disease and to teach the people how to live so as to attain this aim. We have found the teachings and discussions of great interest and are in hearty accord with virtually everything there said.

The book is one of those that physicians should put into the hands of their clients, especially the mothers of families, and which they should use as textbooks in teaching those whose education has not been sufficient to enable them to follow discussions that naturally must be more or less technical. "How to Live" is, in our opinion, one of the best treatises on this vital subject.

BOWERS: "ALCOHOL"

Alcohol: Its Influence on Mind and Body. By Edwin F. Bowers, M. D. New York: Edward J. Clode. 1916. Price \$1.25, net.

CLINICAL MEDICINE has, from its very birth, considered it as a very great advantage of the active principles over galenicals that they can be used without the simultaneous presence of alcohol, rendering, as they do, the alcoholic extracts, tinctures, and other spirituous preparations superfluous. The therapeutic use of alcohol has been discouraged persistently in these pages as unnecessary, even though it was admitted that under certain exceptional circumstances a dose of alcohol might aid one in tiding a patient over a dangerous period. Even now we are not prepared to recede from this latter position, one which is shared by some of our most experienced clinicians. Nevertheless we continue to insist that the routine or the indiscriminate prescribing of alcohol is to be dep-

recated, exactly like that of any other poison.

Doctor Bowers' book on alcohol has been prepared with a high degree of industry and with an unflinching enthusiasm that must lend power to his reasoning. He presents his subject forcefully and, with few exceptions, logically, arriving at the unavoidable conclusion that the therapeutic use of this dangerous drug should be eschewed. Yet, as even the devil is said to have some good traits, so alcohol is of undoubted value—when used externally; so much Doctor Bowers is willing to concede to it.

As for its food value, upon which its supporters have built their strongest arguments, Doctor Bowers finds that "alcohol is a poison which can be considered a food, provided one carefully avoids using it." This Irishism is a specimen of many quaint and epigrammatic sayings that enliven the lecture of the interesting treatise. The book is worth while, and it should be read, marked, and taken to heart.

HOGAN: "DIET FOR CHILDREN"

Diet for Children. A complete system of nursery diet with numerous recipes; also many menus for young and older school-children. A home- and school-guide for mothers, teachers, nurses, and physicians. By Louise E. Hogan. Indianapolis: The Bobbs-Merrill Company. 1916. Price 75 cents.

This is an excellent little book, which does far better than it promises on its title page. Physicians should study it, and they may very properly give it to the mothers of their child patients.

DAVIS: "PAINLESS CHILDBIRTH"

Painless Childbirth, Eutocia, and Nitrous-Oxide and Oxygen Analgesia. By Carl Henry Davis, A. B., M. D. Chicago: Forbes & Co. 1916. Price \$1.00.

The author of this little volume forcibly and firmly stands for the right of women to give birth to their children without having to dread the pain and the anguish that, foolishly and wrongly, have been asserted, throughout the ages, to be the inevitable curse of woman. He maintains that the pains of labor may be alleviated and, in fact, eliminated, without danger to mother and child, and that this result is her due.

Discussing the various means at our disposal for securing this result, Doctor Davis concludes that nitrous-oxide analgesia is

attended by the smallest degree of danger and that it gives the best results. He does not consider the "daemmerschlaf" of equal value, because of possible idiosyncrasies both to scopolamine and to morphine.

The author presents a very serious arraignment of the medical profession in the figures by which he shows the excessively high mortality from puerperal sepsis, which by him is attributed to faulty use of instruments and to other meddlesome midwifery, besides careless habits in the matter of asepsis. While in well-regulated hospitals the mortality from puerperal sepsis has been reduced to almost nil, it has been shown that this preventable disease is responsible not only for many deaths of women attended by practitioners in their homes, but also for all too many cases of invalidism and actual diseases consequent upon confinement.

It is said that figures do not lie. We should be sorry to believe that matters are as bad as here asserted, although it must be admitted that they are, in fact, very bad. Undoubtedly much more is to be learned in the matter of clean (meaning *clean*) midwifery, and far more should be practiced.

McJUNKIN: "LABORATORY METHODS"

Hospital Laboratory Methods for Students, Technicians, and Clinicians. By Frank McJunkin. Philadelphia: P. Blakiston's Son & Co. Price \$1.25.

Although this volume is intended for the hospital laboratory worker and for the technician of other small laboratories, it contains much information of which the general practitioner may avail himself for the simpler clinical tests which are needed in daily practice, and the results of which should be known promptly in order to save valuable time.

WHITING: "BANDAGING"

Bandaging. By A. D. Whiting, M. D. Illustrated. Philadelphia: The W. B. Saunders Company. 1915. Price \$1.25.

The author asserts that the art of bandaging has deteriorated because of the too prevalent use of the gauze roller, and he advocates the use, at least for practice, of muslin. Since the purpose of the roller bandage is, to hold in place splints, dressings, etc., that bandage is the most useful one which accomplishes this purpose in the best manner. Still, it is true that bandages should be applied properly, and proper bandaging is an art which must be learned and practiced.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6232.—“Hysteria.” J. H., Kansas, writes: “I have at present a patient who is not improving as I could wish. As all of the alkaloidal preparations I have used have proven very satisfactory, I feel that, if properly employed, they will do the work here, too. The patient is a girl 17 years of age and of so-called nervobillious temperament. She attended ‘holiness meetings’ in December, 1915, and became much excited. In January, she came to have spasmodic nervous movements of the right foot and leg, which soon extended to the entire right side and then to the left side, until now this trouble seems to be equally distributed over the body.

“Her menses were delayed, but now appear every three weeks and last from six to eight days, accompanied by more or less pain during the first few days. There is some tenderness in the region of the ovaries; also, some anemia; the skin is pale, hands are cool, nails pale, mucous membranes red; the pupils are extremely enlarged, resembling those of cats’ eyes, but her mother says they have always been large. There is no muscular weakness, but she has lost in weight and her flesh is flabby.

“The woman has been under treatment since May 20. Her nervousness has improved by about 50 percent, but she does not seem to be making any further progress. Since the above date, she has received macrotys and scutellaria, a dose every three hours, supplemented, since July 1, by iron and hydrastis, taken four times a day. Her thyroid gland is slightly enlarged, and for this she has received iris and phytolacca. The appetite is good and the bowels are regular. The family-history is good. There are three other children, all healthy.”

Your confidence in the virtues of the active principles is as gratifying as it is well founded; but, even so, in view of your experience with them, it will not be necessary for us to point out that the definite results which follow the

administration of active principles are predicated, in a very large measure, and primarily, to a definite understanding of the pathologic conditions present in the patient and underlying the obvious clinical conditions.

In the case under consideration, the clinical picture presented unfortunately is a vague one. True, certain pronounced features obtrude themselves—amenorrhea, a moderate degree of anemia, cool hands, pale nails, dilated pupils. On the other hand, the mucous membranes are of normal color, so that there is no pronounced hemic disorder. The history, on the whole, leads us to think seriously of an underlying hysteria. Taking all the circumstances into consideration, we are inclined to direct special attention to the pelvic viscera. Investigate the young woman’s habits carefully, and, if the clitoris is hooded, perform circumcision. At the same time, dilate the anal sphincter.

Also, on general principles, we should try spinal faradization. The internal administration of nuclein and neuro-lecithin, three times daily, together with zinc phosphide, 1-64 grain after each meal, for one week; then substituting the trivalerates and sumbul for an equal period of time, may be expected to do good. Continue these alternate courses for six or eight weeks. Thorough elimination—renal, dermal, intestinal—must, of course, be maintained. Positive suggestion also ought to be practiced. If the patient is told very positively that the minor operation recommended will prove curative, it probably will.

It would be a good idea, of course, to ascertain definitely the condition of the body-chemistry. We suggest, therefore, that you submit 4 ounces of urine from a 24-hour output, for examination at the laboratory.

QUERY 6233.—“Diabetes Insipidus.” G. S. M., Pennsylvania, sends a specimen of urine for microscopical examination and states that

the amount excreted daily is largely in excess of the normal, sometimes reaching as much as 100 ounces. The appetite is good and digestion very fair, but there is a steady loss of body-weight. A great deal of pain of a neuralgic or rheumatic character is alleged. One day the head and neck is involved, another time it may be the back or back and legs or arms and shoulders or abdomen. The pain shifts from place to place and frequently is quite severe. This patient is a miller, but recently sold his mill, because of asthma troubling him while following that occupation; recently he has not followed any particular occupation. Our correspondent adds, "I do not suspect any grave kidney lesion, but am trying to make a satisfactory diagnosis and to outline a definite treatment, for, so far I have not succeeded in relieving him at all, and he is worth relieving. Any suggestions you might make will be welcome."

Your report, in conjunction with the uranalysis, is strongly suggestive of diabetes insipidus, to judge from the large amount of almost clear, very faintly yellowish urine voided, which has an extremely low specific gravity and is devoid of sugar.

You will perceive that the uranalysis is largely negative, but also that the elimination of urea is very deficient; however, it contains traces of indican and skatol.

It is essential, of course, to confirm our tentative diagnosis by determining, if possible, a cause; and this may be found in some disease of the nervous system, in trauma, and, sometimes, syphilis. If there is a history of the latter, it might be well to send a specimen of blood for a Wassermann test.

In the meantime, see to it that your patient has free bowel movements, also that he takes the proper amount of suitable food. By all means, put him on a course of the Bulgarian lactic-acid bacillus. In addition, we would emphasize particularly the value of such drugs as ergotoid, strychnine, neuro-lecithin, and the triple arsenates.

The skin should receive proper care, daily tepid baths being prescribed. Also it may aid your patient to rest, lying down for an hour in the middle of the day; but he should be much outdoors, even sleep outside.

We suggest that you report the progress of your patient after two or three weeks' further treatment.

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QUERY 6234.—"Polyuria of Obscure Origin." A. M., Indiana, has under treatment a woman, aged 51, weight 160 pounds, with a history of "kidney trouble" of from fifteen

to eighteen years' duration. Has lost no weight recently. "She gets up four or five times during the night and passes in the neighborhood of 145 ounces of urine every twenty-four hours. She complains of pain in her right side, around the liver; feels sore all over, especially in the regions of the spine and stomach. Her skin looks dark and mottled; she has a bloated appearance. Abdomen is large, and much gas in the stomach and bowels. The stools look greenish (not yellow). She feels weak." The sample of urine submitted is from 12 pints passed during a twenty-four-hour period.

Among the causes which may be responsible for such an enormous excretion of urine, we must consider more particularly diabetes insipidus and amyloid degeneration of the kidneys, besides some terminal stages of nephritis.

If it were not for the presence of hyaline casts, we should be inclined to consider this case as one of diabetes insipidus. Against the diagnosis of amyloid degeneration, speaks the fact that in that condition albumin rarely is absent, as it is here. It probably will require two or three tests to establish the urinary diagnosis. Also, it would aid us if you were to tell us the condition of the pulse and circulatory system in general, including the blood pressure, systolic and diastolic. High blood pressure, associated with a tendency to hardening of the arteries, is, of course, suggestive of Bright's disease.

In the meantime, the functioning power of the kidneys evidently is greatly below par—the urea and total solids being decidedly deficient.

If such symptoms as vertigo, headache, and the like should develop, it would be well to sweat the patient freely, in order to relieve the kidneys of some of their work. Also, it would, undoubtedly, be wise to put some of the work of the kidneys upon the bowels, by prescribing calomel, gr. 1-6, and adding podophyllin, gr. 1-64, with every second dose, until ten doses of the former and five doses of the latter have been given; then a full dose of a saline laxative. Apocynoid may prove useful.

After the bowels have been emptied thoroughly, the condition of the liver will require attention, since evidently there is retention of bile. Your suspicion of gallstones may be justified. Bilein, in doses which you must determine by actual trial, will aid in this respect.

Withhold meat from the diet for the present and order buttermilk and galactenzyme in

sufficient amounts to encourage the "friendly" bacteria in the intestinal tract.

It seems to us that this case offers considerable possibilities for trouble and that you may have difficulty in tiding the patient over the present danger.

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QUERY 6235.—"Activation of Latent Tuberculosis." W. B., Texas, reports the case of a man who, in December, 1915, contracted grip. "He had fever for three or four days, then got better, but had a hard cough for six weeks. The cough disappeared, but his usual strength and appetite have not been regained. The bowels do not move well without the aid of laxatives. The patient says that a little exertion tires him out, but he has no pains anywhere. He hawks up gray-looking mucus about twenty times a day, but is not bothered at all at night. The morning temperature is 96° or 96.5° F. The morning pulse is 55, the evening pulse, 65. No loss of weight has occurred. He does not sweat; sleeps well. Family history is good. A short course of mixed-infection bacterins has been taken, but without benefit. Autotoxemia was thought of, but laxatives have not helped any."

While your letter gives a very good clinical history, it, still, leaves out a number of data that would aid in forming a definite opinion. In a case such as you describe, one would think, first of all, of an activation of a latent tuberculous process. Or, one might conclude that the patient experienced a superinfection with the tubercle-bacillus, and that this may have become effective, because the person's usual resistance was lowered by the attack of influenza last December.

This assumption is, however, hardly supported by the temperature and pulse. A morning temperature of 96 degrees, in tuberculosis, suggests a later stage. An evening temperature of 97 to 98 degrees hardly is seen in active tuberculous disease, while the pulse in this affection is far more likely to be rapid, even in case of tuberculous intoxication, rather than to be slow; as it is here. Altogether, the behavior of temperature and pulse does not suggest a bacterial source of the present indisposition. Nevertheless, it will be well to submit a specimen of sputum, for examination.

Autotoxemia is not always of intestinal origin, as you will remember, but may be bacterial or may be due to insufficient metabolism in some internal organs, and in such a case a course of cathartics may fail to afford the necessary relief.

It seems to us that this man needs a good rest, going fishing or hunting or following his natural inclinations in some other way. At the same time, we wish you would make a very thorough physical examination and report results. Also, by all means, let us have a specimen of the urine—4 ounces of the 24-hour output, stating the total quantity voided.

Meanwhile we only can offer suggestions in a general way. The arsenates with nuclein will always be of benefit, and neuro-lecithin will help. A generous supporting diet, containing also much fruit and coarse vegetables, so as to stimulate bowel movement, would be of value.

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QUERY 6236.—"Persistent Nausea." B., North Carolina, sends a specimen of sputum of a man, aged seventy-four, weight 15 pounds below normal condition, maximum temperature 99.6° F., who has constant nausea; has had bronchitis for years, also has mitral insufficiency; and asks for diagnostic and therapeutic suggestions. The nausea is the most distressing symptom.

As you undoubtedly are aware, the prognosis of tuberculosis depends largely upon the condition and efficiency of the digestive apparatus, and for this reason the nausea, which is a predominant symptom in this case, will require your first attention. It is probable that, owing to this unfortunate symptom, your patient's appetite is interfered with; but, despite the fact that he is 15 pounds under weight, we would suggest a preliminary fast, in order to rest his stomach.

It is possible that the nausea is due to his swallowing sputum, which should be expectorated, or to a diminished acidity of the gastric juice. In the first case, the habit of swallowing sputum must, of course, be broken; in the second event, small doses of dilute hydrochloric or sulphuric acid, or, better, betain-pepsin, will help materially in remedying the trouble.

It would be well to flush the stomach with free draughts of water—the more so as the drinking-water of your locality is equal to the best in the world—as the present writer knows from personal experience.

In order to stimulate the function of the stomach, we would advise the administration of quassoid, 1-32 grain before meals, and this may be combined with monobromated camphor as long as the nausea continues. If further aid to digestion is required, papain will serve you well.

Considering the patient's advanced age, you probably will have to deal with a certain sluggishness of the bowels, and he may require a few doses of bilein, possibly combined with podophyllin and followed by a saline laxative. The action of any laxative drugs must, however, be kept within bounds.

QUERT 6237.—"Spasm of Cardia or Diverticulum?" C. W. W., Nebraska, forwards a specimen of stomach contents (test breakfast of one slice of bread and one glass of water), together with the following history: "Male; age, 43; height, 6 feet; weight, 155 pounds; color, fairly good; slight anemia. Father and mother dead; father died at age of 65, cause unknown. Mother accidentally killed at age of 55. Five brothers and five sisters, all healthy, except one brother, who has kidney disease of cardiovascular origin. "The patient resided in Oklahoma until one year ago, when he moved to Nebraska. He was a conductor by occupation and drank moderately. He was entirely well up until 1913, when he began to have difficulty in swallowing his food, and soon noticed that he had to take large quantities of water in order to wash the food down. The drink at times would regurgitate through his nose and mouth. He cannot eat a meal without washing it down with large quantities of water.

"He does not complain of pain in the stomach, there is no tenderness on palpation, he coughs a great deal, but no evidence of a tuberculous condition can be found. The cough seems to be caused by a chronic pharyngitis. He has had chills and fever, which quickly respond to quinine, and this seems to be a result of a malarial infection.

"The patient feels quite good, aside from a weakness caused by insufficient nourishment. Up until three years ago, his weight was 180 pounds. He has not lost appreciably in the last year. His pillow each morning is covered with mucus and small particles of food, which have been regurgitated during the night. At times he complains of a feeling as if a lump were starting at the cardiac end of the stomach and passing toward the pharynx. The stomach-tube passes readily into the stomach.

"I am inclined to think that this is a condition of esophageal dilatation, sacculatation or of cardiospasm. What is your opinion?"

The report of our pathologist shows that there is present marked hypochlorhydria. Staphylococci and streptococci are present in considerable number. Under the circumstances, we should strongly suspect an ex-

tensive erosion of the gastric mucosa in the region of the cardia. This would account for the symptoms you describe. Of course, there may be some esophageal dilatation, but it should not be difficult to settle this question definitely.

Medication is not likely to prove particularly effective. Gastric lavage and the use of the galvanic current, with careful dieting or even, perhaps, a period of rectal feeding, may produce excellent results.

You might, however, try the following: Betain hydrochloride, grs. 2; pepsin, gr. 1; papain, gr. 1-2; these, dissolved in 4 ounces of water, taken with meals. Also: Resorcin, gr. 1-40; stovaine, gr. 1-50; atropine sulphate, gr. 1-2500; delphinine (crystal), gr. 1-1000; taken one hour after meals. We should not permit too large quantities of fluids to be drank. It would be well to have this man's blood and urine examined.

QUERY 6238.—"Urinary Acidity in Diabetes." J. K., Pennsylvania, asks whether there is any relationship between diabetes and high or low urinary acidity, as ascertained by the decinormal test solution? "I often find," he writes, "that the acidity sometimes is high and sometimes low. What does that indicate in diabetic urine? Also, is there a simpler way of testing for acetone than with the sodium-nitroprusside salt? Kindly advise me of the best work on uranalysis."

There subsists a definite relationship between diabetes and high acidity of the urine, in so far as the greater the acidity the more unfavorable the prognosis in diabetes. In case of low acidity, unless there is an accompanying high ammonia output, the prognosis is much more favorable.

There is no simpler accurate way of testing for acetone than with sodium-nitroprusside.

The best work on uranalysis is Ogden's "Examination of Urine," published by The W. B. Saunders Company, and the price is \$3.00. Doctor Ogden is a recognized authority on this subject and his book not only is readable, but thoroughly scientific and accurate.

QUERY 6239.—"Talipes Equinovarus." J. A. C., Missouri, asks advice in the following case: "Girl, 8 years of age, never much sick, save with measles and light attacks of indigestion at intervals. Walked at twelve months of age, but had an attack of indigestion or was 'sick' for a few weeks, and then did not again walk until she was 14 months of

age. Shortly thereafter it was noticed that the child had a 'weak ankle' on right side, and this did not improve, but grew a little more pronounced very slowly as the years went by.

"Some six or eight months ago, it was noticed that the weak ankle was worse, that the child was beginning to walk with the foot somewhat abducted and that there was a slight limp or wobble in its gait. Soon it was discovered that the child would stand with its weight mostly on its left leg, and that the right heel did not come in contact with the ground in walking. This was causing a calloused condition of the ball of the great toe on the right side, and a degree of club foot, also some shortening of the great toe on the affected side.

A few weeks ago, the tendo Achillis on the affected side was found to be very pronouncedly contracted, so much so that the right foot could not be flexed to anything like the normal degree. This seemed to keep the heel drawn upward, so that it was not placed down in the normal way in walking. Also, it was found that the right limb, both below and above the knee, was 1-2 inch less in circumference than the left. The patellar reflexes were about normal in both legs. Child never has complained, or admitted, that there is any pain in connection with this condition; but, it evidences a very tired state of the right foot and ankle in the evening, seemingly from the strain put on the ankle by the walking in the manner described. There is an appearance of shortening of the right limb, but this is found deceptive and owing to the tilting of the pelvis—which appears to be necessary in order to accommodate the shortened or contracted state of the tendo Achillis, as mentioned. The child's general health and vitality seem normal.

"Submitting this child to a child-specialist in St. Louis, in the present month, the examination excluded tuberculosis by test, and a diagnosis of paralysis and deformity, due to a past attack of infantile paralysis, was made. Thereupon the patient was referred to an orthopedist. The latter arrived at the same diagnosis and advised, as the only important measure, the division of the tendo Achillis.

"Question: (1) Can you concur in this diagnosis, from what is herein set out? (2) Would the treatment, in your judgment, be best, the diagnosis being right or wrong? (3) If the tendon is divided and cared for properly, will it reunite, do so in a reasonable time, be strong again, and give satisfactory results? (4) Is there any danger that the tendon may not unite?"

We have carefully considered the data presented and assume that you have to do with a typical talipes equinovarus; that is, an inversion of the sole, elevation of the heel, and a torsion and adduction of the anterior part of the foot.

Of course, this deformity is frequently a result of infantile paralysis. Authorities state that spontaneous cure or improvement never occur. The tendency to relapse is strong throughout childhood, and almost certain after correction by tenotomy, manipulation or incision, unless the foot is retained for years in an overcorrected position. The earlier treatment is begun, the better.

In a child of 8 years, overcorrection is essential, and this necessitates division of the soft parts, usually the tendo Achillis, the plantar fascia, and the soft tissues of the inner and lower side of the foot. Procedure is outlined in any modern work on orthopedic surgery. We refer you especially to Keen's "Surgery," volume ii.

Forcible correction is recommended by some orthopedists. The present writer objects to this method, however, as tuberculosis, osteomyelitis, neuritis, even death from fat embolism have occurred. Extensive sloughs from pressure frequently result.

Where the deformity is known to be the result of anterior poliomyelitis, mild measures may be tried at first; for example, the patient should be etherized and the position of the foot rectified by manual force. Then a supporting brace is to be worn. In the mildest cases, the use of such a brace alone, with massage of the affected muscles, may prove sufficient. However, in a child of the age given, division of the tendons and contracted muscles seems to be indicated. Such procedure is practically free from danger and, done by a competent operator, should give results.

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QUERY 6240.—"Gleet." G. A. D., West Virginia, has a patient, who some five or six years ago contracted gonorrhea. He was considered "cured" but, after he took several drinks of whisky, the discharge returned. His gleet dries up and he seems well, but just so sure as he takes a drink of whisky or beer it returns. Our correspondent wants to put him on calcium sulphide to saturation, then continue this, in small doses, for three or four months. Also, he thinks of using urethral bougies containing 2 percent of protargol.

Impress upon your patient, doctor—first, last, and all the time—that you will, never in the world, be able to relieve him of his

trouble unless he *absolutely* cuts out all whisky, gin, beer, or other alcoholic. Even coffee and tea should be interdicted during acute exacerbations.

After your patient thoroughly understands this essential point (and were we in your place we should *refuse to treat him* unless he promises to be good), you may proceed along the lines suggested. Your treatment is good, but probably will not be quite enough. You must remember that in these obstinate cases, which get well and relapse upon the slightest provocation, gonococci frequently are localized in the posterior urethra and beneath the mucous membrane, so that they are not always reached by injections. This is one reason why bacterins, more particularly autogenous bacterins, have been found effective in recalcitrant cases.

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 QUERY 6242.—“F. H. R., male, 41, teacher. Fairly well developed, well nourished, height six feet, weight, 180 pounds. Father, 78, died of pneumonia; mother, 64, died of tuberculosis; one brother, two sisters, health good. Has had measles, whooping cough, but not scarlet fever. Had periodical headache since childhood but this has improved with glasses. Denies syphilis and gonorrhea. When sixteen years of age suffered from ‘internal strain’ caused by jumping with weights, from which he fainted; described as a tearing pain in region of bladder. Fainted six or eight times in next ten years. Has not fainted for nine years.

Present trouble started in summer of 1897, while attending college. Noticed that he was passing urine more frequently than usual, no pain, no increase in amount. Riding horseback seemed to aggravate the condition. Took treatment for next two years, without apparent relief. Was never told that urine was abnormal. In 1903, patient was confined to hospital for typhoid fever, from which he made an excellent recovery. During the time and for a short time after leaving hospital, this urinary condition was much improved. His physician attributed this improvement to the regulation of his diet, habits and elimination, rather than to any special treatment for this particular trouble.

Previous to this time, patient had worried a great deal about his condition, not so much from any discomfort but because there seemed to be no permanent relief, on account of the inconvenience and annoyance, experienced. Now he became more resigned to his trouble and entered more actively into his work. His condition remained about the same as

before, his weight at that time ranging from 150 to 160 pounds. Urinated about 15, 20, to 25 times daily; rarely at night, unless awakened from other causes. About four years ago he began to drink one to two quarts of milk daily and gained 20 to 25 pounds, which he still retains, although he does not drink much milk now. While drinking milk, he noticed that he passed urine more frequently and in slightly larger quantities.

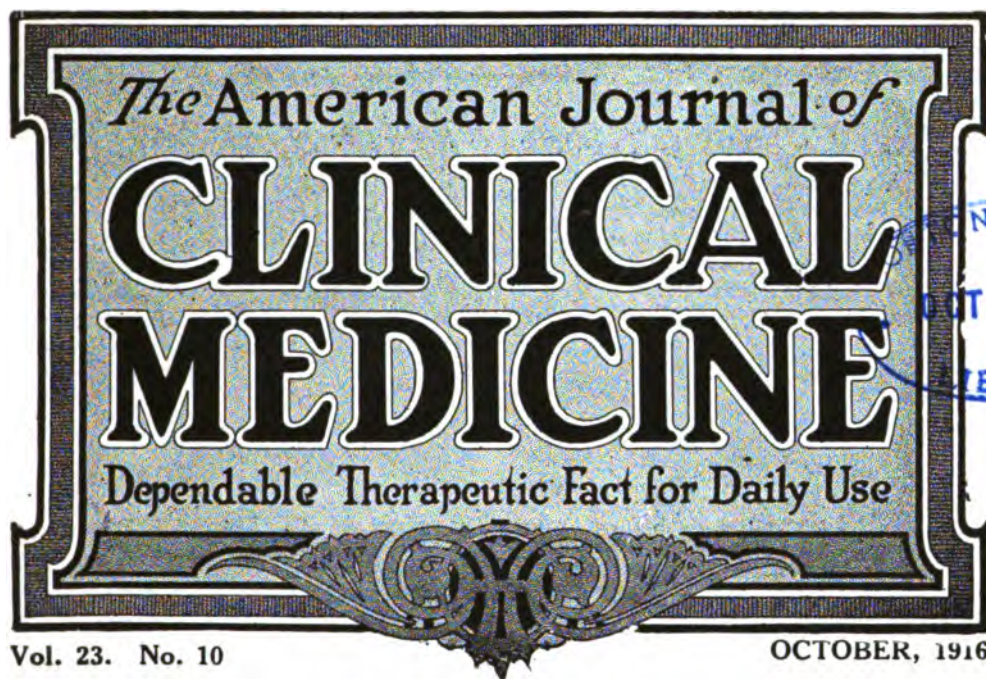
Came under my care about eight years ago. Urine always normal chemically, lungs negative, nothing abnormal except this urinary frequency. Have tried formin, arbutin, tritica, soda benzoate, irrigations of boric acid and silver nitrate, with apparently no benefit. Tr. hyoscyamus in 30-minim doses three or four times daily gives temporary relief. For the last three months he thinks he is urinating more frequently through the day and often one to three times during the night. There is apt to be delay in urine starting and it stops at intervals before he is through. Passes three to five pints in twenty-four hours, one to eight ounces at a time. Has no trouble to retain urine, but there is a slight pain in back, and nausea, if urine is held long after the desire to void.

The appetite is good, thirst not excessive, but drinks water frequently from habit. Have not used cystoscopy, but sound reveals no stricture. Is of nervous temperament but has excellent control over himself.”

We have come to the conclusion that you have a mild form of coli cystitis to deal with in a highly nervous patient. Bladder irritability is set up, in some individuals, with extraordinary facility, but from the history we should imagine a gross lesion of some kind occurred years ago and it is more than likely that more or less infection has existed since that time. It would be a good idea to examine the prostrate carefully and, if any congestion exists, institute the line of treatment briefly outlined pamphlet which we have mailed to you.

Under any circumstances, we would employ coli-bacterins. Place the patient upon a highly nutritious and easily assimilated diet and administer a pill containing strychnine, quassia, papain and juglandin, one before each meal; bilein and pancreatin an hour after eating. Limit the ingestion of fluids to a pint and a half *per diem* and instruct your patient not to take anything to drink for three hours before retiring.

It would be a good idea also to have him bathe the perineum and lower abdomen with cold water, morning and night.



Death—The Inevitable

IN the days of our youth, now, alas! long since passed away—we were powerfully impressed with the legend of “stout old Baron Rudiger”; who, after a lifetime spent in exchanging doughty blows on the battlefield, found himself at last facing the grim champion Death. But the dauntless old heathen never blanched and hurled his defiance in the face of his enemy:

“But I defy him. Let him come!”
Down rang the massy cup;
And from its sheath the ready blade
Came flashing halfway up.

Nevertheless, Baron Rudiger died.

In times more recent, Mrs. Eddy formulated a faith which, she assured her followers, would defy death and confer on them earthly immortality, provided their faith proved sufficient. She taught that people need not die if only they willed to the contrary. The germs of truth in the application of the rest of her system proved so alluring that today, all over the land, stately temples have risen, that testify to the wide acceptance of her principles.

Nevertheless, the lady is dead.

Elie Metchnikoff, that MEDICAN, too big for the wide sands of Russia to confine or for Judaism to circumscribe, proclaimed his disbelief in the inevitable death. By

taking thought, he asserted, the end might be long postponed.

Nevertheless, Metchnikoff has gone to his fathers.

Death is not debatable. To youth, it is a something the occurrence of which is relegated to the very far-distant future—somewhat as one thinks of the millennium or the end of the world. Between it and the now, stretches an illimitable extent of life—life filled with achievements, filled with pleasures; days of successful battle and hours of recompense. The thought of the ending of all this is scarcely a cloud on the horizon.

Nevertheless, Death comes, and every one of us at the last will wage with him a losing battle.

Youth—bounding, ebullient youth, glorious in capabilities as yet unlimited, crowded with the expanding germs of developing life, resistless as the mounting sap that rends the solid rock, meeting all things with the fresh, keen relish of life's springtime—shouts with exultation at its own prowess and the anticipation of things to come.

The period of growth ends, the burdens begin to be felt in the years of midlife; and, as decay progresses, they chafe and bear down upon the relaxing frame. Kindly nature provides solace for disappointments, weakens

our hold upon the terrestrial and shifts our affections to the great beyond. Memory brings to mind the friends of yore, the kindly grave father, the brown-eyed loving solicitous mother, the others who have most nearly touched our inner selves. Worries come, cares multiply, energy vanishes, and at the last we may appreciate these beautiful lines which the Countess of Blessington has translated from the country Frisian:

What art thou, Life?
A weary strife
Of pain, care and sorrow
Long hours of grief,
And joys how brief,
That vanish on the morrow.
[*Hwat bist du, Libjen,
Ien wirch sribjen
Fen pine, noed, in soarch:
Lange ieren fen smerte,
In nochten ho kaart
Del ford wien den moarns.*]

Death, what art thou,
To whom all bow,
The sceptered king and slave?
The last, best friend,
Our cares to end.
Thy empire is the grave.

[*Dood, hwat bist du,
Ta hwaem all buwjge,
Da scepterd koning und da slawe?
Da laetste, baetste freond
* * * * *
Dyn gebiet ist in ta graef.*]

Who wants to die! ! Not I! Not any sane man, unless under very exceptional conditions of agony or distress. Every one of us wants to put off the ringing-down of the curtain to the last ultimately possible moment. Even the Pope—and whatever may be our faith, we feel a personal respect for the kindly old men who occupy the chair of St. Peter—who of all living beings should have the greatest sureness of his mortgage on a mansion in eternity, is in no special hurry to foreclose. There is a tradition that, if the Pope on taking his seat does not change his name, he will die within the year; and it is a fact that the last four who as Popes retained their former names actually did die before the year ended. Just so—it has been over 400 years since any Pope disregarded the superstition and retained his real name.

The welcome given to Metchnikoff's book on "The Prolongation of Life" was worldwide. We do not now spend the best years of our lives searching for the fountain of youth, as did Ponce de Leon, nor for the elixir of life, like the alchemists. We take this matter into the laboratory and seek for the causes of decay and the means of postponing it. We study

the human machine and look for evidences of weak parts, which then we try to patch up and keep going. We ask ourselves: "When is this man likely to die, barring accident, and why? How may we best prolong the period of his usefulness and pleasurable existence?"

The prolongation of life is the most important, the most profoundly interesting, the most needed, and yet, the most neglected of the specialties—and it would be the most lucrative, were it followed as assiduously as are the others. "All that a man hath will he give for his life"—and the old man usually has quite a lot.

It will take a century to determine whether the Bulgarian bacillus really combats successfully the intestinal germs causative of old age. It does not require five minutes to decide that fecal toxemia is not conducive to health, happiness or longevity. We are only dimly conscious of the part possibly played by the leukocytes in our economy, and a study of these may bring us closer to a knowledge of the vital principle than we should have thought possible a few years ago.

Are they *always* friends?

Meanwhile—keep your eye on nuclein.

If I had ten million dollars I would spend every cent to make people kinder, gentler, more tolerant. It can be done. The people can be made to see that kindness is the only religion that is worth anything, and that cruelty is the supreme sin. And I even know how it can be done. —Dr. Wm. J. Robinson, in the Critic and Guide.

TRANSMISSION OF INFANTILE PARALYSIS FROM PERSON TO PERSON

It has been pointed out with sufficient emphasis that the people at large, and physicians in particular, often are anything but consistent in their views concerning the economic importance of the transmission and danger of infectious diseases. An epidemic of scarlet-fever, diphtheria or smallpox that demands a hundred or even two hundred lives as a sacrifice causes a hysterical activity on the part of the health-authorities, and, on the part of the people, indignant protests that such things are permitted to occur. Yet, the same people view almost with complacency or maybe a mere shrug of the shoulders the fact that other diseases, more particularly pneumonia and tuberculosis, destroy thousands of lives where the others kill hundreds. It has been said correctly that, if the people and the medical profession would fight pneumonia, typhoid fever, and tuberculosis with the same energy and persistence that they manifest in the struggle against the three infectious

diseases, diphtheria, scarlet-fever, and small-pox, named above, those greatest factors in the mortality of the nation would be all but eliminated in a short while.

The present epidemic of infantile paralysis presents an instance in point. We are not suggesting that the mortality and the danger from this epidemic are negligible, and we realize fully that infantile paralysis carries worse trials and greater disaster in its train than do the other diseases, because of the sad and heartbreaking disabilities which it produces in the majority of those who recover from an acute attack. It is, therefore, quite easy to understand the fear of this disease that prevails among physicians and laity alike, and it is but human that the attempts to eliminate and exterminate the epidemic should overshoot the mark in many respects.

We believe that it is not wise to go to extremes with reference to the alleged transmission of the infection from person to person. Indeed, if the facts of the matter are considered, the logical conclusions would demand an extension of quarantine and of preventive measures that would be astonishing and impossible in practice. In a letter to *The New York Medical Journal* for August 26, Dr. Simon Baruch points out that the direct transmission of the infection of infantile paralysis from person to person has not even been proved. He quotes dependable researches to show that any danger that exists from "carriers" incriminates adults and not children, and continues: "In view of the fact that poliomyelitis is rarely contracted from contact with an acute case, and of the accepted idea that it is mostly spread by adults, exclusion-quarantine should, logically, be enforced on adults rather than on children. Rigidly enforced, such a quarantine would stop all travel, with the result that public resentment would immediately terminate it."

It goes without saying that we are in cordial accord with all attempts to limit the further spread of this terrible disease, but we believe that these attempts should proceed along a reasonable line, the more so as it is quite possible to protect children and others who may be in danger of exposure to the infection.

The initial symptoms, while not absolutely characteristic, are sufficiently suggestive for at least a tentative diagnosis, and, as soon as suspicion arises as to the probable existence of infantile paralysis in a given person, it should be incumbent upon the physician in charge to provide everybody within reach

with an efficient internal antiseptic. And, for this latter purpose, we know of nothing better than calcium sulphide given to saturation. The curative value and preventive power of this remedy in infantile paralysis, has been demonstrated, and the treatment is so simple that we cannot think of any excuse why it should not be adopted.

Talk happiness instead of gloom and keep your face with smiles abloom. There's so much sorrow everywhere, so much of fear and carking care; that one who would increase the woe, we size up as a public foe. Too many people kick and knock; we hear too much depressing talk, too much of doubt and dole and doom—talk happiness instead of gloom! Talk happiness and you will fetch new courage to some hopeless wretch; you brace up tired despondent men, so they will get their grip again; the message in your hopeful words will travel faster than the birds and help more people far and near, than you could number in a year. Oh, get the habit right away, while yet the year is young and gay! Make up your mind to can the whine and keep your eyes from leaking brine; behind your whiskers let there be a smile that speaks of faith and glee. Go down among the croaking boys and shame them with your cheerful noise. For life is short and we should strive to have our fun while yet alive; if we'd do that we must believe that it is foolishness to grieve; for doubts and fears we'll have no room; talk happiness instead of gloom.—Walt Mason.

THE MAILING OF "POISONS"—LEGISLATIVE RELIEF

Every reader of CLINICAL MEDICINE knows that for some time it has been deemed impossible to send potent medicinal preparations by mail, owing to a decision rendered by the Postmaster-General on this point. Under this ruling, such drugs as strychnine, aconitine, morphine, arsenic and arsenical preparations, digitalin, in fact, nearly everything having a powerful medicinal action, became unmailable. This ruling has continued in force for, now, two or three years, and, despite the efforts repeatedly made by representatives of the drug-trade and the medical and pharmaceutical professions, it has been found impossible to secure any modification of it.

Pharmaceutical manufacturers are now generally sending the proscribed substances by express; however, when, in case of emergency only one, two or three items in small lots are ordered, the charges become almost prohibitive; while, moreover, many physicians in this country are located at a great distance from the nearest express-office. Think of the burden placed upon a physician residing fifty miles or more from an express-office and who has a patient in danger of dying for want of say, digitalin-tablets, or who, maybe, is refused a shipment of hypodermic tablets of

morphine because some distant druggist or his nearest jobber will not violate the law.

We have called attention, in *CLINICAL MEDICINE*, to this interpretation of the law more than once and have urged our readers to exert their influence toward securing its modification. Thus far all appeals in this direction have proved unsuccessful. At last, however, a bill has been prepared and submitted to congress, which, if passed, will give relief. This bill (H. B. 17396 and S. B. 6834), known as the Kern-Doremus Bill, confers power upon the Postmaster-General to admit to the mails "poisons and articles and compositions containing poisons that are not outwardly or of their own force dangerous or injurious to life, health or property," provided they are so securely packaged as not, through leakage, to endanger the mails or those handling them.

We urge every reader of *CLINICAL MEDICINE* to get behind this measure. Unfortunately, congress is now in adjournment; however, it will reconvene early in December, and at that time every physician and every medical society should endorse this bill and urge its speedy passage.

Count that day lost whose low descending sun
Views from thy hand no cancer cure begun.
—Life.

THE CARE OF CHILDREN'S TEETH

Some years ago, a dentist charged the writer very seriously and emphatically never to permit the teeth of his children-patients to be neglected; and this counsel has been faithfully heeded. It was with a good deal of astonishment that this writer read, recently, in the chairman's address before the section on diseases of children of the American Medical Association (*Jour. Amer. Med. Assoc.*, 1916, July 29, p. 323) the assertion that indifference to the subject of children's teeth pervades both the medical and dental professions, and that, indeed, many members of the latter seem woefully ignorant of the great importance of conserving children's teeth.

It appears that many dentists refuse to accept children as patients for the purpose of trying to save their deciduous premolars or even the first permanent molars, on the ground that it is "not worth while." The excuse is, that fillings, inserted for preserving the deciduous teeth will fall out in a short time and, consequently, must be replaced; that early decay of the temporary teeth does not injure the children; and that malformation or malocclusion of the permanent teeth

can later be corrected, if it occur in consequence of premature loss of the deciduous teeth.

It is surprising that such a specious excuse can either be made or accepted at the present juncture. There are many reasons, immediate as well as remote, why children's teeth should receive the same painstaking attention which is accorded the permanent ones, and a failure to do this or a refusal on the part of the dentist to attempt to save the deciduous teeth until they fall out spontaneously is little short of criminal. We of the older generation, whose childhood was passed during the days when little attention was paid to baby teeth because they would fall out anyway, know from sad experience the distress and pain which is suffered, not only from aching teeth, but also because of the unsightly appearance of the decaying teeth; for, children are not without vanity—and it is just and right that they should wish to look as well as possible.

Aside from the fact that the appearance of a little tot with decaying baby-teeth is anything but pleasant, it must not be forgotten that this condition may affect the permanent teeth; that it gives occasion for a faulty, insufficient, onesided use of the jaws and, in consequence, to its faulty development. The esthetic point of view arguing in favor of attending to every slightest anomaly and irregularity of the body is, by no means, of small importance and may become a factor in deciding the future fate of the child, especially the girl-child.

Of even greater importance is the fact that an insufficient use of the teeth, in the case of small children just as much as in that of older ones and of adults, may be responsible for digestive disturbances of various intensity and extensity, and which may lead to serious gastrointestinal diseases, with all their possible sequels. But, most of all, should one pay attention to the care of the deciduous teeth on account of the ever present bacterial flora in the mouth of the child, even of the youngster that has not yet lost its baby-teeth. If any anomaly exists in the small mouth, if, for instance, caries develops, a portal of entry is given for various bacteria, which may cause swelling of the cervical lymph-glands and from there may be carried into various organs of the body, where serious disturbances and pathological processes may be set up.

A great variety of pathogenic bacteria have been found in carious deciduous teeth, and in recent years the importance and significance of "focal infection" has been insisted upon,

with great justice, by many investigators and clinicians. The care of the baby-teeth is, therefore, as much a wise investment for the preservation of health as is any other prophylactic measure, quite aside from the fact that much actual physical pain and mental distress will be spared to the little ones, which rotten teeth surely will cause them to suffer.

"There are thousands who tell you it cannot be done.
There are thousands who prophesy failure;
There are thousands who point out to you one by one,
The dangers that wait to assail you,
But just buckle in with the trace of a grin,
Then take off your coat and go to it.
Just start in to sing as you tackle the thing
That cannot be done, and you'll do it.

—Sparks.

A NEW WAY TO TEACH SANITARY SCIENCE

Beginning with the College of the City of New York, several of our medical schools are organizing departments of practical hygiene. The student now takes a personal interest in the matter, as it begins with him personally. *The Lancet-Clinic* informs us that the poky old burg on the Ohio has taken it up, and it jubilates warmly over the new department of hygiene of the University of Cincinnati.

The University of Wisconsin established for its 6810 students such a department in 1909. The cost of the system is stated to be \$25,015. No fee is exacted from the students, their biennial incidental fee of \$12 covering the costs.

Each student receives a medical examination at the beginning of each semester, and the facts gathered afford data for grouping the students academically and physically. The staff is made up of seven full-time physicians, five doing the clinical part, the others, the laboratory and x-ray work. Four nurses and as many student assistants as may be required complete the staff. Besides the entrance examinations, free advice is given all student applicants, free care and treatment, and instruction in personal hygiene, both individually and in the classes. An infirmary with 25 beds is maintained, to which the student-patient pays a dollar a day while confined.

In the college-year 1914-1915, the number of students consulting the staff was 3851, and these made 23,818 calls. The cost to the university, therefore, was somewhat over a dollar a call. The equipment consists of waiting- and consulting-rooms, clinical laboratory, radiologic laboratory, electrocardio-

gram-station, lecture- and demonstration rooms.

The benefits derivable from such an institution are incalculable. The student's health is cared for, and he learns the principles and the practical application of that preventive medicine that for so long has sojourned exclusively in the well-turned rhetorical periods of the essayist. We might almost forgive Johns Hopkins for abolishing the chair of therapeutics, if it were to substitute a really effective teaching of sanitation.

STUDIES IN CARDIAC THERAPEUTICS

Many of the cardiac remedies act specifically upon the motor ganglia. Stimulation of these is shown by an increase in the rapidity and the energy of the cardiac contractions. This not only is observed when the drug has been introduced into the circulation of the animal, but also when it is applied directly to the heart. The stimulants of the motor ganglia are: alcohol, ether, chloroform, chloral, also other anesthetics, cyanogen, arsenic, quinine, and guanidine. We find that quinine, which doubtfully is ranked by Brunton as a depressor of the cardiac muscles, is placed by this investigator among the stimulants of the motor ganglia. Guanidine is ranked by him as a stimulant in both the lists.

The observations of Thomas J. Mays indicate that the stimulant power of the alcohol, or anesthetic, group is manifested only under small or even quite minute doses. This certainly is true also as to cyanogen, in which latter the stimulant dose is exceedingly minute.

Depression of the motor ganglia is evidenced by the pulsations of the heart becoming closer and weaker, the organ finally stopping in diastole. That this is owing to some influence upon the ganglia, and not upon the cardiac muscles, is evidenced by the heart's contracting upon mechanical or electric irritation after spontaneous pulsation has ceased.

The depressants of the motor ganglia are: ergot, hydrocyanic acid, antimony. (The arrest in diastole caused by antimony is changed to stoppage in systole by helleborein.) The drugs that in small doses stimulate, when used in larger quantities or at a later stage, depress the ganglia.

Members of the digitalin-group should be employed when it is desired to increase the energy, but not the rate, of the cardiac contraction, and also the peristaltic activity.

The camphors accomplish all this, excepting the increase of peristalsis.

The anesthetics also increase the rapidity of the pulse. The application of the remedies of this group requires especial caution, in that, while small doses given early stimulate the motor ganglia, if this stimulation is carried on to a certain degree, exhaustion of the irritability results, whereupon further dosage not only will cease to stimulate, but even will cause depression of this function. This is especially true for the anesthetic, or alcohol, group.

The difference between Opportunity and the rest of us is that old Op knocks but once.—Luke McLuke.

STUDIES IN CARDIANTS: THE INHIBITORY GANGLIA

The danger lying in the careless use of the term "stimulation of the heart" becomes evident when we consider that stimulation of the cardiac inhibitory ganglia will stop spontaneous pulsation of the heart, even though it will continue, for a while, to contract after the application of an irritant. The stimulants of these inhibitory ganglia controlling the cardiac muscle are muscarine and pilocarpine.

Depression or paralysis is shown when irritation of the vagus trunk or of the venous sinus fails to slow or to stop the heart beat; and then muscarine will have no effect when applied directly to the heart-muscle.

The depressors of the cardiac inhibitory ganglia are: atropine, hyoscyamine, daturine, duboisine, cocaine, sparteine, and saponin. Merck asserts that the four members of the mydriatic group here mentioned are merely atropine with varying percentages of admixtures of hyoscyne, these two alkaloids being the only ones which he admits to exist in this group. Saponin, is ranked as a depressor of the heart-muscle, but its sedative action seems opposed by a checking of inhibition. The asserted heart- tonic action of cocaine is explained in the same way, and possibly a part of the tonic action of sparteine; although with both this seems largely due to their vasorelaxant power, as by opening the terminal arterioles and capillaries, the work of the heart is eased. These remedies are, therefore, effective and safe when we wish to increase the work of the heart as a whole. However, recognizing that the action of cocaine and sparteine is depressant in the final analysis, they should be used with extreme caution and close watchfulness.

Muscarine has scarcely been employed in medicine, because of the extreme difficulty of obtaining any physiologic effect from it. It is so swiftly eliminated by the kidneys that it seems almost impossible to secure its action, excepting by intravenous administration. This method remains to be developed.

At the present time, pilocarpine is exclusively used for the purposes mentioned above. This remedy offers a rare illustration of an extraordinarily powerful action, with a singular absence of peril. The tremendous perspiration induced by pilocarpine is not usually attended by danger to the patient. Even so, probably the degree to which toxemia is responsible for much of the danger to patients, not only in infectious diseases, but in ordinary conditions, is to be taken into account. Whereas the perspiration induced by pilocarpine contains one-half as much toxins as does normal urine, ordinary perspiration contains but one-tenth the amount; hence, the quantity of toxic matter excreted by pilocarpine-sweating is enormous.

The limitations of the application of this powerful remedy have, by no means, been established as yet. Much remains to the clinical observer for the study of its action in various infectious maladies.

"THE WHOLE PLANT VERSUS ITS PARTS"

A recent issue of *Monthly Therapeutic Topics*, published by the N. A. R. D., contributes quite a lot of information for the doctor's use. The article is couched in the kindest, most forbearing terms, really quite paternal, from the standpoint of an affectionate father imparting instruction to a rather small boy. This may be judged by the fact that the instruction imparted has no relation whatever to matters in which the druggist may be assumed to have knowledge to give us, but is a matter supposed to come under the doctor's ken and in which one might imagine he could instruct the drugman—the choice of medicines for the treatment of the sick. Just listen:

Our mentor tells us that it is not the employment of the active principles, but of the crude drugs, that constitutes real medicinal treatment. In other words, it is the inert parts of the plant that cure—the inactive woody fiber, cellulose, gum, pectin, tannin, and such like. The really active parts may have their uses, but these are, at best, only

limited, and the doctors err in placing too much dependence upon them, "and, as a result, get into the habit of treating symptoms only and forget to treat the more serious underlying disease itself."

Now, this suggests a remedy—let us have evening classes in which the druggist teaches us how to practice medicine: "Sorter" post-graduate course. Without this, how expect a mere doctor to know what he ought to do for his patient? Instances—

"Quinine does not represent cinchona or equal it as a tonic." Queer that our adviser does not begin at home and tell his big men to quit using the alkaloid in their elixirs of iron, cinchona, etcetera.

"Nux is far superior to strychnine, except in hypodermics." Same suggestion—the pharmacist uses the alkaloid to get a better preparation.

"Digitalis"—the uncertain, decomposing infusion and tincture are superior to the uniform, dependable glucosides the digitalin which France has used for half a century without caring to look for anything else.

"Except for hypo, morphine is far inferior to deodorized opium." How? In certainty, uniformity, rapidity of action, palatability, ease of administration, foreknowledge of effects to be expected, the scientific basis established by experimental investigations—oh, what's the use! If the man does not know what he is talking about, how hope to teach him.

But, here's another "argument": "It makes all the difference in the world if the active principles are prescribed in the combination in which they exist in the plant." Why? Where is the proof? This is one of those silly assumptions that are based on a lack of thought; for, even a very little should tell the man that the active principles are developed in the plant for its own purposes, and not simply to be stored there until man happens along and utilizes them.

"Why do people drink coffee instead of a solution of caffeine?" Easy—because they like the coffee. And why do the druggmen present us a coffee deprived of its caffeine? The same reason explains why smokers use tobacco and not nicotine—they like tobacco.

The notable things about this curious publication are, dense ignorance shown as to our application of drugs and the assumption of similar ignorance on our part, as compared with the writer's own superior erudition. He is on a par with a certain illiterate chap (he could not read), who, seeing an artist sketching, undertook to advise him how to paint

so that he might get as much as 25 cents for a picture.

We should be under obligations to our friends of mortar and pestle were they to take the following propositions and find a flaw in the argument.

1. Drugs are substances that affect one or more of the functions of the body, influencing them toward normal action.

2. Drugs—plants and ores—contain active ingredients and inert materials. If the latter have any physiologic action, they are not inert. If they possess none, they are merely dirt, encumbering the active parts, making the doses larger, disagreeable, and slow in getting to work.

3. The action of a drug—plant or ore—is the sum total of the action of its various active ingredients, acting and interacting with and on each other.

4. The active principles of a plant or an ore are developed in accordance with the conditions of the plant or the ore, and their use as medicine is incidental and foreign to those governing their formation.

5. The active principles developing in drugs are variable in quantity and proportions, never quite the same in any two specimens.

6. The action of the raw drug varies with the composition, the quantity and the proportions of each of its active ingredients.

7. Every series of tests applied to the galenics found in the shops has demonstrated their variability over a scale so wide that the only way the doctor can know the real powers of these drugs is, by trying them on the patient—thus losing valuable time and endangering the patient's life.

8. To ascertain the real powers of drugs, the experimenters were driven to the single active principles, since the variability of cruder preparations rendered accurate testing impossible. As a consequence, we have the powers of single active principles laid down with an accuracy impossible with any cruder preparations. This renders scientific application of these activities possible in accord with modern needs.

9. It is the uncertainty of the older preparations that is mainly responsible for the pessimism of a large part of the medical profession toward drugs and its desertion of them for any and every drugless method of treatment. So profound is the contempt for drugs thus engendered that it is difficult to persuade many that there is anything in any drugs worthy of consideration.

We shall be obliged to the N. A. R. D. folk if they can show a flaw in a single one of these

propositions, employing common-sense arguments, and not appeals to superstition, prejudice, tradition, or appeals to "authorities" who are governed by the foregoing. Show us, please.

For the comforting warmth of the sun that my body
embraces.
For the cool of the waters that run through the shadowy
places,
For the balm of the breezes that brush my face with
their fingers,
For the vesper-hymn of the thrush when the twilight
lingers,
For the long breath, the deep breath, the breath of a
heart without care,—
I will give thanks and adore thee, God of the open air!
—Henry Van Dyke.

SWATTING MAN—THE BRUTE!

In *The Woman's Medical Journal* for August, Inez O. Philbrick, a she-female lady doctress of Lincoln, Nebraska, contributes a paper which, the title informs us, is devoted to the advocacy of "a municipally salaried obstetrical staff." Said title is a misnomer—the lucubration celebrates the opportunity of the lady to express her inner, low-down, sure-enough opinion of man—the tyrant—the brute. And the opportunity is embraced with an ardor that speaks volumes for the pent up emotion back of it.

How she enjoyed it! Wow!! Delivered before a public meeting, presumably of sister women animated by similar sentiments, the only thing lacking, was, a man, to hear it. And he should have been a typical one—a burly brute, well-fed, smelly of tobacco and booze, of the sort who sit behind the kitchen stove and smoke while their better halves cook for boarders and attend to the household, in the intervals between having babies—yes, this specimen should have been bound securely in a chair, facing the speaker, mouth gagged, but ears propt wide, while the fair lady gave vent to her emotions.

Doctor Philbrick starts out rather in-offensively. She approves of the state's assumption of medical teaching, and even goes one better, by proposing to "substitute a salaried service for the privately paid service of the well-to-do." We write under the well-deserved reproach of having accepted fees. Well, as Holy Willie said, if the Lord leaves us this sin just to keep us from overconceit, because of our gifts, we shall try to endure it with resignation.

Obstetrics in Lincoln, Nebraska, must be in a bad way, judging by Doctor Philbrick's

account. Listen to this: "In these latter days, obstetrics has suffered, more than any other branch of medicine, from incompetence and exploitation, not because originally practiced by ignorant women upon women, but because latterly practiced by largely incompetent ill-trained men upon women, from mercenary motives. A society dependent upon and dominated by brute force, giving to man possession of woman, could but engender in men a contempt and in women a servility leading inevitably to their exploitation by men. And so it has been sexually, industrially, socially, and professionally."

Now
will
you
be

good!!!!

Having reduced the brute to proper abjectness, the lady proceeds to correct the Bible: "Biology and sociology prove the writer of the story of Genesis to have fallen into grievous error in declaring that woman was created as a helpmeet for man. Science establishes the reverse."

John, when you have washed the dishes, carried in the wood and filled the water-bucket, you may iron out my shirtwaist and then go back to your plowing.

"It is man's misfortune that to him should have fallen the coarser, baser functions inevitable to the early ages of struggle, and woman's fortune that to her fell the finer part. Future progress for the race must consist in sloughing off those predominant qualities engendered in man by his experience and the taking on of those engendered in woman by her experience."

We have puzzled and pondered over that clause for a good while, but, somehow, the meaning intended to be conveyed eludes our gross, masculine comprehension. What is it we are to slough off? Does she mean our pants?

Inez then puts her desires, not in the slavish manner of a request, but as a demand, haughtily leveled at the heads of the cringing enemy. She summarily dismisses all men-folk from obstetric practice and placidly takes it over for the hens, and she establishes for them a state-paid salary in compensation.

All the doctors in the home town of William Jennings Bryan attend obstetric cases, except the eye-and-ear men. And why *they* should surrender this lucrative field is a mystery, for sure—have not babies eyes and ears, and, hence, are they not legitimate prey? But, none of the doctors there,

according to Inez, are any good as aids in delivering babies, but they take the cases from the unworthy object of winning the good will and the other practice of the families involved. How mean! One prominent practitioner, even, is accused—inferentially—of assisting the Christian Scientists to believe that babies are realities—"and just for the fees he gets out of it! "Five years from now, I doubt not, a majority of those on this list will have found a sufficient number of financially sound individuals willing to be relieved of their appendices, drained of their bile or cured of their kinks to enable him to retire from obstetric practice." Nezzie, you'll have to diagram that—we submitted it to a surgeon, and he says he can not guess what you are trying to intimate. The only thing suggesting itself to his mind is a thought too monstrous to be put on paper.

"Worse than there being all degrees of technical knowledge" (among the he-midwives there) "and skill represented, there are, necessarily, found all degrees of social intelligence and of recognition of moral responsibility to the patient, to society, and to the physician's own conscience." Now we strike firm ground—social intelligence—and we know the malefactor—a Lincoln doctor we once saw on the street wearing a sack-coat and a plug hat. How perfectly awful!

Phil, old scout, I wouldn't have believed that after such a vitriolic arraignment of your coarse-grained colleagues you could have been guilty of sacrificing the Right to the Expedient, of foregoing a duty, for mercenary motives, as you here acknowledge: "Several times in recent years, I should have induced premature labor, to the saving of some children, had I not been dissuaded by the fact that it is not recognized procedure among my obstetrical colleagues, and by the certainty of subjecting myself to the accusatory criticism of myself as a meddlesome obstetrician and to undeserved loss of patients and professional prestige." And you let human lives be lost rather than face criticism *and loss of practice?*

And the doc knows it pays to advertise: "Should one among us advertise (not through press or from platform, but in those quiet and effective ways known to ethical practitioners) that hereafter he would confer the blessing of twilight sleep upon every patient employing him in childbirth—primipara or multipara, first or second stage—we should have no choice if we cared to retain any considerable obstetric practice, but at

least make a feint of doing likewise." Bully ad, that. Abbott better grab it!

But, Doctor Philbrick, do you make a practice of promising your patients things you do not intend to do, merely from base commercial motives? We fear you have been looking at your fellows through green glasses.

Does the same contempt for the narrow limitations entailed by respect for veracity rule the defense of midwives—because they are female? How shall we interpret this:

"Midwives still attend a vast number of obstetrical cases, and with comparatively little mortality and morbidity. And when a midwife's case goes wrong it is generally because she has lost patience and courage and called in a doctor. . . . The ordinary operations of housekeeping necessitate the frequent thorough cleansing of the midwife's hands; she attends no infectious cases; she performs no unnecessary operations (Ouch!) It was a royal prostitute who set the fashion for the eminently unfit employment of male obstetricians." Unless memory tricks us, that court lady employed a man, so that, she gave as an excuse, the particulars of her accouchement might not be tattled all over Paris.

Before accepting the lady doctor's dictum as to the midwife, hunt up Cuzner's awful account of her—that is, the midwife's—work in Florida; a record that shocked the community and well deserved its title as "legalized malpractice."

Just a few more gems:

"Men are disqualified as obstetricians, for lack of interest. . . . Men through age-long training, have become regardless of human life. . . . Who are responsible for the waste of life on Europe's battlefields today? Who are exploiting women and children in industry? Who are exploiting women's highest function, her sex-function, to base and cruel ends in the white-slave traffic? Who are sacrificing happiness, health, and life itself in the liquor-traffic? Who tramp this land by the hundred thousand filling the public benches of every city? Who are deserters of home and children?" Why, it's the darned men, of course.

Now, if you rascally men doctors feel sufficiently squashed, hear the lady's remedy:

Ten doctors, connected with a municipal maternity, are to care for all of Lincoln's baby-cases. (We did not know that there were just ten lady doctors attempting to practice in Lincoln!) They are to receive salaries that afford them "abundant periods of leisure for medical and general reading and for needed

participation in medical, social, and political affairs." Sure—and the women must arrange their dates so as not to conflict with the pink-teas.

The woman of it inevitably comes out: She would have all obstetric procedures set by law, with no deviation on individual initiative; yet, the nurse must be freed from the obligation to "stand by the physician" and allowed to disobey when her judgment does not coincide. One real fact is uttered: a one-year nurse will answer for routine cases, the graduate being required for emergencies only. Nix on the 25-a-week.

"Time forbids," . . . fortunately the lady's breath gave out here, and we are spared quite a lot more of what she was ready to say. But, then, the above suffices. Doctor Inez probably feels better now that she has rid her system of all that, even though not all of it escaped.

The best way to inspect the abdomen is with the feet toward the light.—Hamburger, in "Medical Clinics of Chicago." Whose feet?

LIVE STOCK AND POISONOUS PLANTS

The Bureau of Animal Industry of the Department of Agriculture has issued a bulletin on the prevention of loss of live stock from plant poisoning. From it we learn that the losses of live stock on the western ranges for many years, have been quite heavy. Losses from infection and from wild animals are very slight as compared with those from poisonous plants. Local losses of from five to fifty percent are not at all unusual. Deaths from larkspur, among cattle, up to ten percent are quite common, while the losses of sheep, from death-camas and lupine, frequently run from ten to sixty percent. These losses are not occasional, but continuous. Heavier in some years than in others, every year has its story of these deaths. Nothing else constitutes such a grave problem in the successful handling of live stock on the ranges as this matter of dealing with poisonous plants flourishing in a given area.

Several methods have been proposed to eradicate these pests. One is, by reseeding the range, so as to grow the desirable grasses and thus crowd out some of the noxious wild plants. Theoretically this may be possible, but experience gives but little hope for practical success. Thus, the attempted destruction of the loco-weed has not been successful. Sheep will accomplish a good deal

in the destruction of low larkspur, which does not appear to be poisonous to this animal; however, as this plant is perennial, it is not easily exterminated.

The most effective way of getting rid of the plants, thus far tried, has been the very laborious one of digging them out. The loco may be killed by cutting it off below the crown of buds, or 3 inches below the surface. This should be done before the plant has ripened into seed. In this way, a man can clear a quarter section very rapidly, and at slight expense. As this plant may remain dormant in the soil for some years, the cutting has to be repeated.

The larkspur grows in masses in box-canyons or about springs, and it is not difficult to root it out. The price of one or two steers pays for a large amount of work. When larkspur is scattered over a wide area on the hillside or in the valley, the expense of rooting it out is greater than the range is worth. However, if the larkspur about the springs is cleared out, the cattle are not likely to die, since they are not poisoned unless they eat considerable quantities of the plant.

Water-hemlock grows along ditches. The best way is, to dig or pull out the roots. Death-camas grows from a bulb and in such enormous numbers that the cost of digging would be greater than the value of the range; and this is also true of lupine and sneezeweed.

Death-camas, however, is a spring plant, which dries up after blossoming and disappears. The sheep are poisoned by it mainly in May and June. If the range is not turned over to these animals until July, the danger is over.

Lupines are most dangerous when the pods are full of seeds, as it is they which contain most of the poison. Lupine-poisoning, therefore, occurs in late summer and fall, and the danger is greater in wet seasons. They should, therefore, be avoided in the late summer and fall.

Low larkspurs have largely disappeared by the 1st of July, except at great elevations. Tall larkspurs do not die until killed by the late frosts. However, they gradually lose their poisonous properties in every part of the plant, except the seeds, and these the cattle seldom eat in quantities.

The loco-plants affect all grazing animals. Cattle and horses rarely suffer much from death-camas, so that they may be grazed where sheep would be poisoned. The lupines are much more dangerous for sheep than for cattle and horses. The larkspurs are deadly

for cattle, but do not poison horses or sheep. Horses never eat enough of larkspur, under range conditions, to harm them. Sheep find the larkspur a good forage-plant.

It is only when more wholesome food is deficient in amount that the cattle consume the poisonous plants in large quantities, so that supplying an abundance of wholesome food is a good preventive. This does not apply to the loco-weed, which is a veritable habit-plant to grazing animals. Animals turned directly from the cars into a pasture are especially liable to be poisoned if they are not well fed before being turned loose. Animals should not be bedded two successive nights in the same place. They should be drifted and not driven, so as to allow them a wider range and freer choice in the selection of their food.

The surest way to get rid of an objectionable product, like these poisonous plants, is, to make of it an article of commerce. The Turks rid Cyprus of the locust by buying its eggs. Ginseng, hydrastis, and other valuable plants have been practically exterminated by the authorities putting a price upon them, and even when hydrastis brought in the market only 20 cents a pound the entire eastern part of our country was denuded of this extremely valuable plant.

It is mentioned in the Bulletin before us that death-camas contains veratrine, while the larkspur has delphinine and the water-hemlock cicutine, three exceedingly powerful alkaloids, which are of inestimable benefit to mankind.

If we collected our own wild plants, instead of importing them from foreign countries, we should accomplish a double object; by gathering them we could utilize the natural product and at the same time prevent their killing our herds. Range-men should encourage the shepherd to vary the monotony of his life by collecting these plants, and this he is more likely to do if he is given a premium for doing so. If he is given the proceeds of their sales, his occupation would be more lucrative, and a corresponding benefit would accrue to the range.

We have, for years, urged paying attention to our native drug-plants, and now are glad to notice that the most recent observations show that American-grown digitalis actually is superior to that for which we have been paying England and Germany up to \$2500 a ton. The Northwest, where the foxglove has become an objectionable weed, might find it considerably to its advantage to cultivate this plant, at a very considerable

reduction of these figures, even if they can get \$15.00 a ton for alfalfa.

It is not always fair to the medical man to charge him with incompetence because he is unable to express a positive opinion. In some instances an honest confession of failure is a sign of ability.—W. S. Gordon.

LABORATORY TESTS OF DRUGS—ENDOCRINE SECRETIONS—PSYCHIC INFLUENCE

The Therapeutic Gazette for May, 1916, in referring to the popular belief that bitter tonics are beneficial during convalescence from acute diseases, in that they aid digestion by increasing the tone of the gastric mucosa or by inducing a freer secretion of gastric juice, points out that this view seems to have been proved mistaken by some experiments conducted by Carlson upon normal men and also upon healthy dogs. For, this investigator found that bitter tonics do not produce any advantageous effects, but, rather, that sometimes there is observed a diminution of the quantity and the quality of the gastric secretion.

Since then, Moorhead has carried out another series of investigations, in which he studied, not normal, but abnormal, conditions; in view of the fact that certain drugs exhibit their specific actions only in pathological states. Moorhead actually found in dogs in which chronic anemia had been produced by repeated bleedings that bitter tonics exert a distinctly favorable influence upon the appetite. Also, given by mouth, the amara cause both an increase in the quality and the quantity of the gastric juice; although this effect does not follow when they are introduced directly into the stomach, thus excluding the buccal cavity. This would seem to indicate that the flow of the gastric secretion is caused reflexly through the nerves of taste, and not by any direct stimulation of the stomach itself.

Moorhead then puts the question whether the bitter tonics do actually stimulate the appetite or the gastric secretion, or both, or whether their action is purely psychical.

The results of pharmacological experiments, more particularly upon normal animals, have given occasion to the verdict that no physical action of the drugs under investigation could be determined and that any effects claimed by clinicians to result from them are purely psychical—the inference being that the drugs in question are to be condemned for that reason, being without any merit in the cure of disease. However, the incorrectness of this line of reasoning should have been sufficiently

demonstrated, it seems, by the famous experiments conducted upon dogs by the late Professor Pavlov, who found the secretion of gastric juice to be stimulated by the mere sight of food, as also by letting the animal swallow food, which was made to pass out through an esophageal fistula without having entered the stomach.

More recently, the influence of the emotions upon the nutrition, the circulation, and the nervous system has been described at some length by Professor Dearborn, in his excellent book bearing the title "The Influence of Joy." This author also refers to the fact that the functioning of many organs—for instance, the stomach—is influenced by that of the endocrine glands; yet, the important fact remains that none of our pharmacological experiments concerning the action of drugs upon the digestive organs, the circulation, the nervous system, and so on, take account of any indirect effects possibly manifested through the agency of the glands with internal secretions.

As a matter of fact, however, pharmacological and chemical experiments designed to establish or to disprove the therapeutic properties of any given drug can not be admitted as capable of providing the means for any final and decisive verdict, if they ignore the influence of the ductless glands.

Even in animals, the presence of pathological processes as well as their nature, will give rise to effects different from those observed in the healthy state; yes, even in animals the influence of the emotions, with regard to the action of certain drugs, is a factor that must be reckoned with.

But, far more than animals, is man a compound of physical and psychical elements. If the human body has been likened to a finely regulated complicated bit of machinery, the motive power cannot be said to be supplied solely by the physical fuel that is introduced into his mechanism, nor is its activity regulated by the function of the various vital organs alone. The "psychical" component of man influences all vital processes to a far greater extent than seems to be realized in the pharmacological and chemical laboratories, and the clinician has learned from sad experience not to rely implicitly upon the "thus sayeth" of the research-worker, lest he be led into an undue confidence in some respects and thus forego whatever aid might be obtained from others.

Supposing it were true that certain drugs—the bitter tonics, for instance—exert an influence that is "purely psychical," then I am

moved to ask: "What about it? Does that fact cause these drugs to be valueless?" I deny it. Being admittedly constituted of physical and psychical elements, man must be, and is, influenced both by physical and by psychical agencies. The sick man or woman or child wants to get well; nor does anyone care much what means are employed to restore wellbeing, so long as there are tangible results. Supposing the physician does employ means the action of which is "purely psychical" and supposing the patient gets well and remains well, who shall say that the physician has made use of improper means; who shall accuse him of not having earned his fee fairly?

There is an unfortunate tendency, more particularly among laboratory workers and others not in actual practice, to maintain that only one mode of treatment is appropriate for a given disease, to wit, the one they approve of; the one which is demonstrable in the laboratory. Other modes of treatment are, "purely psychical" in effect. If the patients recover—well, either they did not have that particular disease, or they still have it. There is no god but God, and Mohammed is his prophet.

Physicians—even though necessarily money-earners—more than almost any other class of men have cause to get away from the purely materialistic view of life; they see the importance of the psychical, they know its influence upon the wellbeing and happiness of man.

It is time that the calling in aid of psychical therapeutic factors, irrespective of their apparent nature, be recognized as proper, even if administered in the form of drugs. I am aware of the fact that this may be taken as an argument in favor of valueless placebos. As a matter of fact, I am convinced that conditions arise when placebos are far from idle, that, indeed, at times they even have saved life, although (or because) their action may have been "purely psychical."

AN ENCYCLOPEDIA OF SEX

Dr. William J. Robinson, of New York, is working on a great encyclopedia of sex. While all available authorities are being consulted, the majority of the work will be prepared by him personally. This book promises to be colossal—covering every phase of this great subject so far as is now possible. Robinson is the man to do this, and this latest child of his brain is sure to be a masterpiece.

Leading Articles

What A Hospital Can Do for A Country Town

By J. M. FRENCH, M. D., Milford, Massachusetts

FOR more than thirty years, I have practiced medicine in a country town about 33 miles from Boston, which has now a population of a little over 13000. Up to 1903 we had no hospital; but since that date we have had one which is thoroughly modern and well-equipped. Beginning with 15 beds and a little over 100 patients treated the first year, we can now accommodate 45 patients, treated about 700 last year, and there is a prospect of increased accommodations in the near future, to enable us to meet the constantly growing demand. We have a prosperous training school for nurses, also a new nurses' home with rooms for 45 nurses, which is equal in its equipment to any in the state.

In my estimate of the value of a hospital to a country town, I must, necessarily, refer to what it has done for my own town.

For one thing, a hospital makes any town a better place to live in, because it furnishes the opportunity for better care and treatment of the sick. Of all the classes in a community, a hospital is of the least value to the wealthy, because they alone can afford the best of care for their sick in their own homes. It is of more value to the fairly well-to-do, who make up the bulk of most country towns, because it offers to them better care for less money than they can get at home. It is of by far the greatest value to the really poor, who cannot provide any proper care for their sick at home, and who must, therefore, without the hospital, either do without proper care and nursing, or else both doctors and nurses must serve without compensation—and even then, because of the lack of proper conveniences, the best results cannot be obtained. But, with the hospital conducted as most country hospitals are today, the sick poor can have the best of care, at whatever price they are able to pay or at no cost at all to them if they are very poor and unable to pay anything. Dr. Richard

Cabot, you may remember, asserts that only the very rich and the very poor can afford to have the best of medical care and treatment; and, while I don't accept everything that Richard Cabot says, there is something to this statement of his.

Deserving Poor Must be Given Preference

We began our hospital without any endowment and with no provision whatever for free beds or free treatment. But, even under these circumstances, one of the first lessons which was taught to the medical staff by the president of the hospital was this: "When you have a patient who is seriously ill and in need of care and attention that can not be given him at home, *the hospital is the place for that patient.*" So, we learned to bring them in, taking care that provision for payment should be made by all who were able to pay; but when one was wholly unable to pay we brought him in just the same, and let the hospital-authorities look out for the rest. As a rule, when the patient and his friends are unable to pay, the town looks out for the case.

A few years ago, I had under treatment a man seriously ill with pneumonia, whose home was an example of filth and destitution, coupled with ignorance and inefficiency, the worst that I have had to deal with in a long time. It was impossible for him to have any decent care at home, so I tried my best to have him taken to the hospital when he first was taken sick. However, his wife refused to let him go, and it was not until he had been ill nearly two weeks and it became evident that without better care he stood almost no chance of recovery, that she finally consented. He had become so weakened as to make his removal a source of great danger, and he was considerably worse at first as the result of it. After a long illness, however, he recovered—owing, no doubt, to the better

conditions at the hospital, as compared with those at home.

Sometimes the hospital is filled, when it is a question whether a patient who ought to be there can be received or not. In such cases, I suppose, every well-regulated hospital decides, not in favor of the one who can pay the most, but of the one who needs hospital care the most—which is practically always the one who can pay the least. Thus, once I had a patient dangerously ill and in need of care such as he could not get at home. I knew the hospital was overcrowded and had absolutely no beds available; so that, if my patient had been one who could have proper care at home, he would have been refused admittance. So, instead of asking whether there was room for him, I said to the management: "Here is a man who is in urgent need of care that he cannot get at home—I think we shall have to make room for him, somehow." And they did make room for him—how, I do not know. Now, I am sure that you will agree with me that any institution which will do these things gives increased safety to the life and health of all the people and is a blessing to the community as a whole.

Many and many a case I had in the pre-hospital days, where we doctors ourselves suffered anxiety of mind and our patients suffered both in body and in mind, because we were unable to furnish proper care and secure expert advice and treatment, medical or surgical, in season to be of any service. We had no place to take them, no facilities to care for and treat them—and, so, they died. While now, with our hospital right at hand and skilled consultants within easy reach (the best to be found in the state and to be brought to the hospital within scarcely more than an hour), and then with the best of nursing-care to help out, during and after an operation, and to carry out our directions in every respect—with all this now, I say, our patients live where in the olden days they died; and moreover, the practice of medicine has in it, nowadays, more enjoyment and less anxiety than in the past.

Direct Personal Advantages Accruing to the Doctors

The hospital is the best thing I know of to bring the doctors together in a friendly way, get them acquainted with each other, and lead them to appreciate each other and be fraternal. Just put a lot of doctors at work together in a hospital, whether all be on the staff or not, and each one soon learns that the other fellow knows some things that

he himself does not; that, anyway, they can be a help to each other. For ourselves, thirteen years ago, some of our doctors were not even on speaking terms with some of the others, and no one of us was on really good terms with all of the others. We just held up our heads, stuck out our elbows and went our several ways. But, today—oh, we are not angels yet, any of us, but most of us are on friendly terms with all the others and without exception we can, and do, work together when occasion requires.

The hospital is of advantage to the doctor, because to it he can take his very sick patients, his especially difficult cases, his poor people who cannot be cared for properly at home, his rare and obscure cases, those needing expert aid in diagnosis and all those calling for difficult surgical operations, with the certainty that here they will have the benefit of the best obtainable medical and surgical skill and far better care and nursing than would be possible in their own homes.

Another way in which the hospital helps the doctor, and incidentally the community as well, is, by bringing the best men of the profession together there, and thus, through consultations, observation, assistance, and exchange of experiences, developing in the local physicians a greater degree of ability and skill than they would obtain otherwise. I know that this has been true as to our own hospital, notably with respect to major surgical operations.

In the first year of our hospital, almost all of the abdominal surgery, for example, was done by our consulting staff, who came from Boston and from Worcester to operate for appendicitis, gallstones, gastric ulcers, uterine and ovarian tumors, and the like; when today nearly all this work is done by our own men, and well done, too. This makes them of more value to their patients outside the hospital, and, thus, increases their earning power. In this way, as a result of their added experience, these men are recompensed for the work which they do in the hospital without any direct pay; and, while there can be no doubt but that the hospital does really take much money from the doctor's pocket, yet, I have never noticed any great hesitation, either here or elsewhere, on the part of members of the medical profession, in accepting appointments on the hospital-staff. It looks, therefore, as though this were an arrangement advantageous to both parties. And, with every improvement in the average skill of the local medical profession, the whole community is benefited.

Another convincing proof that a hospital is an advantage to its community is found in the fact that, so far as I can learn, it is an exceedingly rare thing for a hospital, once established in a country town, to be given up; also the further fact that the use of the hospital by the people of the surrounding towns having none of their own, almost surely continues to increase from year to year. Furthermore, in our own case, the number of patients treated during a whole year has increased regularly from year to year, with one exception; this exception being due to the fact that a disastrous fire occurred, which put a large number of burned persons in the hospital for treatment, so that the natural growth for the next year was not enough to make up for it. Our average increase during our whole existence has been about 50 patients each year, and there seems no likelihood that the ratio will decrease for a long time to come.

How to Conduct a Hospital

There are a good many ways of running a country hospital, some of them good, some of them—not so good. Ours is an “open” hospital, into which any reputable physician can bring his patients and treat them himself, receiving such compensation as he and they may agree upon. This relates to the private rooms, and not to the public wards, where the rates are less; and, while patients may be admitted to the wards by any physician, yet, the care of them rests entirely with the staff, since in no other way can they be made responsible for the conduct of the wards. But the members of the staff, while attending all ward patients free of charge, are allowed to charge their usual rates for treating patients in private rooms. In this way, the doctors gladly send their private patients to the hospital, and do not feel that the hospital is working against their interests.

The business-end of the hospital is run by a managing board, which is composed mainly of business men, but with two medical men recommended by the staff to look out for the medical and surgical interests of the hospital; and during the thirteen years of its existence, in only a single instance has there been any disagreement between the medical members and the full board, in any matter relating to the medical management of the hospital.

On our staff is one homeopathic physician; yet he was not appointed as a homeopathist, but as a physician, and serves exactly on the same terms as do the other members. In fact, we recognize no difference; and this is made the easier, as he serves on the surgical

side. By our arrangement, two men serve together, for a term of two months, one looking after the medical cases and one after the surgical, but both cooperating whenever it is necessary. This arrangement has proved very satisfactory.

The Training School

Another and important way in which the hospital benefits both the doctors and the whole community is by its valuable nursing service. Our training school provides a three years' course for the nurses, and during their second and third years these nurses are sent out into the homes of the community to do private nursing when called upon to do so by the citizens and they can be spared by the hospital. This is considered a valuable addition to the training of the nurses, combining, as it does, theory and practice under the supervision of their instructors.

If a nurse is graduated and sent out to do private nursing, when she has had no practice in anything but hospital nursing, she is being sent out to do the thing she has never done—and, yet, she is a graduate nurse. On the other hand, this home-service is much valued by the community, and these student-nurses are much in demand. In addition to this home-nursing, all nurses spend four months of the last year in the city of Cambridge, there serving under competent instructors as district or visiting nurses, largely in obstetric and surgical cases, under the direct supervision of their instructors.

I have neglected to say that the obstetric ward of our hospital is proving of especial value to our citizens, as is shown by the fact that 92 babies were born there during the eleven months from June 1, 1915, to May 1, 1916, as against four for the first year, and the number is increasing each year. It is coming to be understood that such cases can be attended much more satisfactorily there than at home, with better results and with much less expense than at home.

To sum up the benefits which a hospital confers upon a country town, judging from our own experience, they are threefold: first, the excellent facilities for the medical and surgical treatment of the sick which are furnished by the hospital itself; second, the increased efficiency and skill on the part of the town's physicians as a whole, brought about by the opportunities and experience afforded by the hospital; and third, the better nursing service and care of the sick in the homes of the community, due to the training of nurses in the hospital, and also

in the homes of the sick, under the care and supervision of their teachers.

It is a common thing for our people to ask each other: "What should we do without the hospital? How could we get along without it now?" And, indeed, to go back to the

old way and get along without the hospital, would be like getting along without electric cars, electric lights, the telephone, and the motor car. We simply should not know what to do or how to get along.

The country hospital has come to stay.

Concerning Hospital Charges

A Criticism

By A. D. HARD, M. D., Marshall, Minnesota

THIS is an age of hospitals. Not only the cities have them, but villages and towns of quite humble size are fast becoming supplied with private institutions where ambitious would-be surgeons are, at least, getting experience. Schools for nurses go hand in hand with hospitals, and classes of two or three so-called trained nurses are every year diplomaed into the "30-dollar per week" crowd of sickness servers. Many of the hospitals are struggling along like inexperienced swimmers, barely able to keep the breathing-organs above the surface, while some are reaping a harvest from their unfortunate "guests" by charges so high that none but the affluent are able to pay them without great sacrifice.

Interests of the Common People Not Considered

Almost all of the city hospitals are constructed without regard to the interests of the great mass of the common people, who constitute three-fourths of the throngs in need of such service. The cost of construction often is twice as much as it really need be, and the extra money spent upon mere architectural beauty compels the management to charge an unreasonable price for service to those who form a large proportion of the sorrowful patrons.

Hospitals, as a rule, are not supposed to be conducted on the money-making basis of business-enterprises, yet, almost all city hospitals charge more per day for service than do first-class hotels. This is absolutely wrong. Food supplies, overhead expenses, hired help, and interest on the capital do not bring the operating-expenses anywhere near to that of a 3-dollar-per-day hotel; nevertheless, unfortunate people of meagre means are squeezed in their extremity to pay these prices. Of course, 14 dollars per week does not sound like 3 dollars per day; however, when the extras are included, the hospital-

bill for the poorest room in the building comes very close to that amount.

I have before me a bill rendered by the Swedish Hospital, at Minneapolis (a good hospital in every way) to a girl of sixteen who was sent there for an operation. She was a working-girl whose salary was \$5 per week. The room rent was not excessive, but to that was added \$7.70 for use of the operating-room (30 minutes) and anesthetic while pathological examinations, medicines, and dressings brought up the total to almost 3 dollars per day.

This is an example of quite general cruel oppression of those poor folk who by circumstances are forced to avail themselves of hospital service.

One reason why these unjust charges are imposed upon those who are not able to bear them is the fact that the philanthropic contributions that largely support these hospitals are diverted to other purposes than aiding the deserving poor who are the occasion of those gifts.

A small local hospital to my knowledge received \$2000 in cash by the will of a kind-hearted widow. A collection of \$600 was, in addition, taken up from the merchants, and the building and grounds were turned over to the aspiring surgeon for one-third their true value — all with the understanding that such help would go to relieve the unfortunate poor of part of their burdens when misfortune forced them into the hospital. But no one has ever heard of such results. And why should we expect it?

Benevolence in these directions should be so guarded by specific conditions of the gift that the objects desired are certain to materialize.

How Money May Be Wasted

Buildings should be complete, convenient, and well equipped, but no money should be

spent on costly location, expensive ornamentation of the building or upon unusual inside finish that does not add to effectiveness. Ward-rates should be limited to one dollar per day, to be available to all who are not able to pay more without incurring an unreasonable burden of debt. There should be no extra charges for use of operating-room and other services of the order mentioned. Apprentice-nurses, recent graduates in medicine as internes and house-physicians who accept the advantages as part pay, all these aids should enable any hospital to reduce running-expenses to a point where the worthy poor can be served at a price that comes within the bounds of reason. If this result can not be achieved by these ordinary means, then it is high time that a call be sent out to the great philanthropists to establish hospitals for the common people, in place of giving their money to any hospital that cruelly oppresses the unfortunate.

As a rule, there is no flexibility in the hospital charge, as in the case of the surgeon who performs the operation. The hospital-bill *must* be paid, while the physician and surgeon can have what is left or wait indefinitely for their recompense. The grasping nature of the heartless hospital shows itself in the placards, announcing that "Two weeks' room expense must be paid in advance," which adorn the office of the usual hospital. Also, the "Bills must be paid before leaving the hospital" seems to indicate that noncompliance might mean a foreclosure on the patient's body, for cadavers are worth 30 dollars in Minnesota.

At the Rochester (Minn.) hospital, the surgeons in charge quite often not only donate their services to those in need, but they also bear the hospital expense where the case truly invites such kindness of heart.

A charge of 5 dollars per day is not excessive for many who are compelled to resort to a hospital, and are able to pay such a price without complete financial depletion; but the people of the great middle class, who do not expect free service, while unable to bear an unreasonable expense, should be able to find some proper hospital care at a price commensurate with their circumstances in life.

Let Us Have Efficiency and Economy

As a physician, one of the many who silently contribute fully one-third of life's compensation to the relief of poverty-stricken humanity—I appeal to physicians everywhere to bring to public notice the unreasonable charges exacted by our hospitals for ordinary

service to ordinary people. It is all very well to see in every village or city beautiful library-buildings, paid for by Carnegie; which are built, usually, with the idea that "here's a chance for some easy money." This tendency to grasp unearned cash when opportunity offers, is manifested in many buildings erected for hospital use from public donations.

Private business concerns that are run by keen-seeing business-men often establish and operate private hospitals, for their employees, that are examples of efficiency and economy. Their overhead expenses are reduced to the minimum, yet, they give ideal service. When a public hospital for common people shall appear which is conducted on similar lines, we shall have just and reasonable service to the great mass of people in moderate circumstances who can pay a reasonable price, but who are unable to stand the exorbitant charges now regularly charged by the average hospital for services that should be offered for half the customary rates.

This robbery of the defenceless poor is as heartless as it is unjust. The victim, under the compulsion of unfortunate circumstances over which he has no control, is forced to go to the hospital where his helplessness gives the bloodsucking vampires their opportunity to rob him inside the law; and with a mercy worthy of a carnivorous beast they seldom lose an opportunity to "skin" him to a finish. This is the true picture of inhuman practice that distinguishes our average hospital from the institution of kindly benevolence which it should certainly be.

This is where the gifts from those sympathetic persons end up who carelessly subscribe for the erection of magnificent hospital-structures, thinking that they are offsetting their past meanness by generous deeds of love for their fellow men. This is philanthropy diverted to graft, honesty changed to thievery, generosity made over into selfish oppression. This is "man's inhumanity to man" with a vengeance excelled only in the barbarism of war; its far-reaching effects reduce the daily food, for which children are taught to pray, to a dry crust on a clothless table, the inherent right to live to the germ-infected filth of abject poverty, and the happy home to a hovel of misery.

If these conditions are permitted to continue, the boasted philanthropic and charitable character of our hospitals is bound to become a by-word and a reproach—an evil stench in the nostrils of all right-minded persons.

Who May and Who May Not Marry

By WILLIAM J. ROBINSON, M. D., New York City

Editor of "The Critic and Guide," and of "The American Journal of Urology and Sexology"; author of "The Treatment of Sexual Impotence and Other Sexual Disorders"; "The Treatment of Gonorrhea and Its Complications" "Never-Told Tales," etc.

[Continued from page 745, September issue.]

Hemophilia, or Bleeders' Disease

HEMOPHILIA is a peculiar disease, consisting in frequent and often uncontrollable hemorrhages. The least cut or the pulling of a tooth may cause a severe or even dangerous hemorrhage. The slightest blow, squeeze or hurt will cause ecchymoses, or discolorations of the skin. The peculiarity of this hereditary disease is, that it attacks almost exclusively the males, but is transmitted exclusively through the female members. For instance, Miss A. comes from a bleeder-family. She marries and has three boys and three girls; the three boys will be bleeders, the three girls will not; the three boys marry and have children; their children will *not* be bleeders; the three girls marry, and *their* male children will be bleeders.

What is the lesson? The lesson is, that boys who are bleeders may marry, because they will most likely not transmit the disease; but girls who come from a hemophilic family, irrespective of whether they themselves are hemophilics or not, must not marry, because most likely they will transmit the disease.

Anemia

Anemia is a poor condition of the blood. The blood may contain an insufficient number of blood-cells or an insufficient percentage of the coloring matter of the blood, that is, hemoglobin. A special kind of anemia affecting young girls is called chlorosis.

Anemia and chlorosis cannot be considered contraindications to marriage, because they are usually amenable to treatment. In fact, some cases of anemia are due to the lack of sexual intercourse, and the subjects get well very soon after marriage.

Epilepsy

While epilepsy—known commonly as fits or falling sickness—is not as hereditary, as it was one time thought to be, its hereditary character being ascertainable in only about 5 percent of cases, nevertheless, it is a decidedly dysgenic agent, and marriage with an epileptic is distinctly advised against. Where both parents are epileptics, the children are almost sure to be epileptic, and such

a marriage should be prohibited by law. Under no circumstance, should parents who both are epileptic bring children into the world.

Hysteria

Hysteria is a disease the chief characteristics of which are a lack of control over one's emotions and acts, the *imitation* of the symptoms of various diseases, and an exaggerated self-consciousness. The patient may have extreme pain in the region of the head, ovaries, spine; in some parts of the skin, there is extreme hypersensitiveness (hyperesthesia), so that the least touch causes great pain; in others, there is complete anesthesia—that is, absence of sensation—so that when you stick the patient with a needle she will not feel it. A very frequent symptom is, a choking sensation, as if a ball came up the throat and stuck there (globus hystericus). Then there may be spasms, convulsions, retention of urine, paralysis, aphonia (loss of voice), blindness, and a lot more. There is hardly a functional or organic nervous disorder that hysteria may not simulate.

Of late years, our ideas about hysteria have undergone a radical change, and we now know that most, if not all, cases of hysteria are due to a repression or nonsatisfaction of the sexual instinct. Only too often a girl who was very hysterical before marriage loses her hysteria as by magic upon contracting a *satisfactory* marriage. On the other hand, a healthy girl can become quickly hysterical if she marries a man who is sexually impotent or who is disagreeable to her and incapable of satisfying her sexually.

While hysteria, in itself, is not hereditary, it, nevertheless, is a question whether a strongly hysterical woman would make a satisfactory mother. The entire family-history should be investigated. If the hysteria is found to be an isolated instance in the given girl, it may be disregarded, if not extreme; but, if the entire family or several members of it are neuropathic, the condition is a dysgenic one. Marriage may be contracted, provided no children are had until several years have elapsed and the mother's organization seems to have become more stable. In some cases, a child acts as a good

medicine against hysteria. In short, every case must be examined on its merits, and the counsel of a good psychologist may prove useful.

Alcoholism

A good deal depends upon what we understand by alcoholism. The fanatics consider a person an alcoholic who drinks a glass of beer or wine with the meals. This is nonsense. This is not alcoholism, and cannot be considered a dysgenic factor. But, where there is a distinct habit, so that the individual *must* have his alcohol daily, or if he goes on an occasional drunken "spree," marriage must be advised against. And where the man (or woman) is what we call a real drunkard, marriage not only should be advised against, but most decidedly should be prohibited by law.

Alcoholism, as a habit, is one of the worst dysgenic factors to reckon with. First, the offspring is liable to be affected; which is sufficient, in itself, to condemn marriage with an alcoholic. Second, the earning-power of an alcoholic is generally reduced, and is likely to diminish further. Third, an alcoholic is irritable, quarrelsome, and is liable to do bodily injury to his wife. Fourth, an alcoholic often develops sexual weakness or complete sexual impotence. Fifth, alcoholics are likely to develop extreme jealousy, which may become pathological, even to the extent of a psychosis.

If both partners are alcoholics, then marriage between them, resulting in children, not merely is a sin, but a crime.

Feeble-mindedness

Feeble-mindedness, in all its gradations—including idiocy, imbecility, moronism, and so on, is strongly hereditary and is one of the most dysgenic factors we have to deal with. Marriage with a feeble-minded person not only should be advised against, but should be prohibited by law. A feeble-minded man has much fewer chances for marriage than has a feeble-minded woman. Feeble-minded girls, even to the extent of being morons, if pretty (as they often are) have very good chances of getting married; not infrequently getting for husbands young men of good families, who themselves, of course, are not very strong mentally, but still far from being considered feeble-minded.

As any instruction in the use of contraceptives would be wasted on the feeble-minded, the only way to guard the race against pollution with feeble-minded stock

is, either to segregate or to sterilize them. Society could have no objection against the feeble-minded marrying or indulging in sexual relations, provided it could be assured that they will not bring any feeble-minded stock into the world. After the man and the woman have been sterilized, there is no objection to their having sexual relations.

Insanity

Insanity may be defined briefly as a disease of the mind. We will not here go into a discussion as to what constitutes real insanity, as to what is understood by insanity in the legal sense of the term, and so on, except to note that we have two divisions.

One is, functional insanity. This may be temporary, or periodical, and is due to some external cause, is curable, and is not hereditary. For instance, a person may get insane from a severe shock, from trouble, from anxiety, from a serious accident (such as a shipwreck), from a sudden and total loss of one's fortune. Such insanities are curable and are not transmissible. Another example is what is known as puerperal insanity. Some women during childbirth become insane, due probably to some toxic infection. This insanity may be extreme and maniacal in character. Still, it often passes away in a few days without leaving any trace and may never return again, or, if it does return, it may return only during another childbirth. This kind of insanity is not transmissible.

The second division is what we call organic insanity. This expresses itself in mania and melancholy, so-called manic-depressive insanity. This is due to a degeneration of the brain- and nerve-tissue and is hereditary.

But, our entire conception as to the hereditary transmissibility of insanity has undergone a radical change. There is hardly another disease the fear of whose hereditary character is responsible for so much anguish. In former years, when there was an insane uncle or aunt or grandparent, that fact weighed like a veritable incubus on the entire family. Every member of the family was tortured by the secret anguish that maybe he or she would be next to be affected by this most horrible of all diseases—disease of the mind. If an ancestral member of the family became insane at a certain age, every member of that family was living in fear and trembling until several years had passed *after* that critical age, and only then would they begin to breathe freely. Indeed, many people become insane from the very fear of becoming insane. It cannot be subject to any doubt

that many people do become mentally unbalanced from the fear that they will become unbalanced. Fear has a tremendous influence on the purely bodily functions, but its influence on the mental functions is incomparably greater; and a person will often get that which he fears he is going to get.

Now the hereditary character of insanity is not taken in the same absolute sense in which it was formerly. While we still consider it a dysgenic factor, yet, we recognize the paramount importance of environment; and we know that by proper bringing-up, using the expression bringing-up in its broadest sense—including a proper mental and physical discipline—any hereditary taint can be counteracted. In connection with this subject, the following statistics will prove of interest.

The families of 558 insane persons cared for in the London county asylums were investigated, and, according to reports received from the educational authorities, only 15 of these (less than 3 percent) had mentally defective children. As to the time of the birth of the children, whether before or after the attack of the insanity, we find the following figures: 56 out of 573 parents had children after their first attack of insanity, and 106 children were born after the onset of insanity in the parent; while the remaining 1259 children were born before the parent became insane.

Altogether, as will be seen from a discussion of the various factors rendering marriage permissible or nonpermissible, we consider environment a much more important factor than heredity. The purely physical characteristics bear the indelible impress of heredity. But the moral and cultural characteristics, which in the modern civilized man are much more important than the physical, are almost exclusively the results of environment.

Neurosis — Neurasthenia — Psychasthenia —
Neuropathy — Psychopathy

I will not attempt either exhaustive or concise definitions of the terms named in the caption, for the simple reason that it is impossible to give satisfactory definitions of them. The conditions which these terms designate do not constitute definite disease-entities, and many different things are understood by different people when these terms are mentioned. Only brief indications of the meaning will be given.

Neurosis is a functional disease of the nervous system.

Neurasthenia is a condition of nervous exhaustion, brought about by various causes, such as overwork, worry, fright, sexual excesses, and so on. The basis of neurasthenia however, is often or even usually a hereditary taint, a nervous weakness inherited from the parents.

Psychasthenia is a neurosis or psychoneurosis similar to neurasthenia, characterized by an exhaustion of the nervous system, also by weakness of the will, overscrupulousness, fear, and a feeling of unreality of things.

Neuropathy is a disease or disorder of the nervous system. Psychopathy is a disease or disorder of the mind.

Of late years, we often hear people referred to as neurotics, neurasthenics, psychasthenics, neuropaths or psychopaths. These are undoubtedly abnormal conditions, and, taken as a general thing, they are dysgenic factors. Now, a dysgenic factor in an animal is a dysgenic factor, and that is all there is to it. There are no two sides to the question. However, if anything goes to show the difference between animals and human beings, and to demonstrate why principles of eugenics, as derived from a study of animals, can never be *fully* applicable to human beings, it is these considerations which we now have under discussion.

To repeat, neurosis, neurasthenia, psychasthenia, and the various forms of neuropathy and psychopathy are dysgenic factors. But, people suffering from these conditions often are among the world's greatest geniuses, have done some of the world's greatest work, and, if we prevented or discouraged marriage among people who are somewhat "abnormal" or "queer," we should deprive the world of some of its greatest men and women. For, insanity is allied to genius; and, if we were to exterminate all mentally or nervously abnormal people, we should at the same time exterminate some of the men and women that have made life worth living.

And what is true of mentally abnormal is also true of physically inferior people. An inferior horse or dog is inferior. There is no compensation for the inferiority. But a man may be physically inferior, he may be, for instance, a consumptive, but still he may have given to the world some of the sweetest and most wonderful poems. A man may be a hunchback and a cripple and altogether physically repulsive, and, yet, he may be one of the world's greatest philosophers or mathematicians. A man may be sexually impotent and absolutely useless for race purposes, yet,

may be one of the greatest singers or the greatest discoverers.

In short, the eugenic problem in the human is not, and never will be, as simple as it is in the animal and vegetable kingdoms. If we want to strive after healthy, normal mediocrity, then the principles of animal-eugenics become applicable to the human race. If, on the other hand, we want talent, if we want genius, if we want benefactors of the whole race, then we must go very slow with our eugenic applications.

Drug Addiction, or Narcotism

Addiction to drugs, whether it be opium, morphine, heroin, cocaine or alcohol, is a strongly dysgenic factor. The addiction to any drug is, of itself, not transmissible but the weakened constitution, or degeneracy, which is generally responsible for the development of the drug addiction is inheritable.

A few cases of drug-addiction are "external"; that is to say, the patient may have a good, healthy constitution, no hereditary taint, yet, because during some sickness he was given morphine rather indiscriminately, he developed an addiction to the drug. But those cases are rare. And such persons may marry, if they are cured and if the addiction is completely overcome.

But, in most cases, *it isn't the drug-addiction that causes the degeneracy, it is the degeneracy, or the neuropathic or psychopathic constitution, that causes the drug-addiction.* Such cases are bad matrimonial risks; and it is a very hazardous undertaking for a woman to marry an addict with the idea of reforming him. Let him reform first, let him stay reformed for a few years, and then the risk is not so great.

Consanguinous Marriages

Consanguinity means blood-relationship, and consanguinous marriages are marriages between near blood-relatives. The physician is frequently consulted as to the permissibility or danger of marriages between near relations. The question generally concerns first cousins, second cousins, uncle and niece, and nephew and aunt.

The popular idea is, that consanguinous marriages are bad *per se*, that the children of near relatives, such as first cousins, are likely to be defective, deaf and dumb, blind, or feeble-minded. This popular idea, as so many popular ideas are, is wrong. And, still, there is, of course, as there always is, some foundation for it. The matter, however, is quite simple.

We know that many traits, good and bad,

are transmitted by heredity. And, naturally, when traits are possessed both by father and mother, they stand a much greater chance of being transmitted to the offspring than if possessed by one of the parents alone. Now, then, if a certain bad trait, such as epilepsy or insanity, is present in a family, that trait is present in both cousins; and the likelihood of children from such a marriage inheriting that trait is much greater than when the parents are strangers, the taint being present in the family of only one of the parents. But, if there be no hereditary taint in the cousins' family, or, still more, if the family is a healthy and talented one, if there are geniuses in the family, then there cannot be the slightest objection to marriage between cousins, and the children of such marriage are quite likely to inherit in a strong degree the talents or the genius of their ancestors. In short, if the family is a bad one, one below par, then marriage between cousins or between uncle and niece should be forbidden. If the family is a good one, above par, then marriage between relatives of that family should be encouraged.

The idea that the children from consanguinous marriages are likely to be deaf and dumb has no foundation in fact. The statistics from various asylums, in Germany, for instance, have shown that only about 5 per cent of the deaf and dumb children were the offspring of consanguinous marriages. If 95 percent of the deaf and dumb had nonconsanguinous parents, how could one say that even in the other five percent the consanguinity was the cause? If it were the other way around, then, of course, we could blame consanguinity. As it is, we can assume even in this 5 percent a mere coincidence, and we have no right to say that the consanguinity and the deafness and dumbness stand in relation to each other as cause and effect.

It is interesting to know that among the Egyptians, Persians, and Incas of Peru close consanguinous marriages were very common. The Egyptian kings generally married their sisters. This was common custom, and, if the children born of such unions had been defectives or monstrosities, the fact would have become quickly apparent and the practice would have been abolished. Evidently the offspring of very close consanguinity was normal or even above the normal, or the practice would not have been continued for such a long time.

It is perhaps worth while noting that one of the world's greatest scientists, Charles

Darwin, was the child of parents who were first cousins.

Homosexuality

Homosexuality (*homos* — the same) is a perversion, in which a person is attracted, not to persons of the opposite, but to persons of the same sex. Thus, a homosexual man does not care for women, but is attracted to men. A homosexual woman is not attracted to men; she is attracted only to women, and may even loathe men.

A homosexual, man or woman, has no right to marry. The wrong committed by a homosexual marrying is a double one: it is wrong to the mate, wrong to the children. The normal partner is bound to discover the abnormality, and, if he (or she) does, then the married life is a very unhappy one. Even if the abnormal partner exerts the utmost efforts to conceal the abnormality he cannot afford any pleasure to the normal partner, because the sexual act committed under loathing cannot be satisfactory. The second wrong is committed on the offspring. Homosexuality is hereditary, and nobody has a right to bring homosexuals into the world, for there is no unhappier being than a homosexual.

I know a homosexual woman, who, though knowing her abnormality, married for the sake of a comfortable home. She has been successful in hiding from her husband her abnormality, he simply considering her frigid. But each sexual act costs her tortures. So far she has succeeded in avoiding pregnancy. I also know a highly refined and educated homosexual gentleman, who married before understanding his condition. Many homosexuals, not knowing that such a thing as homosexuality exists, do not understand their own condition; they feel a little strange, a little puzzled, but they don't know that they ought not to marry. Soon after marrying this man's condition became clear to him, but in the meantime his wife conceived and he is now the father of a healthy, good-looking boy. It is possible that with proper bringing up the development of any homosexual traits will be prevented.

But, to emphasize: homosexuality is a dysgenic factor, and no homosexual should marry.

Sadism and Masochism

Sadism is a sexual perversion in which the person derives sexual pleasure only by inflicting pain on the person of the opposite sex, as, for example, by beating, biting,

striking or other, even more cruel acts. The degree of cruelty varies, but all sadists should be shunned. Unfortunately, the fact that a man is a sadist often is not discovered until after marriage; however, as soon as the wife has found it out she should leave the man and demand a divorce. Sadism is a sufficient ground for separation or divorce. No person with any moral feeling in him or her should be responsible for bringing children into the world with the possible danger of sadistic heredity.

Masochism is a sexual perversion in which the person *likes* to suffer pain at the hands of the beloved object. It is the opposite of sadism. It is a dysgenic factor, but much less important than sadism.

Sexual Impotence

Sexual impotence is not hereditary, but impotence in the male, either so complete that he cannot perform the act or consisting only in premature ejaculations, should constitute a bar to marriage. This impotence may not interfere with impregnation; the wife may have children and the children will not be in any way defective, but the wife herself, unless she is completely frigid, will suffer the tortures of hell and may quickly become a sexual neurasthenic, a nervous wreck, or she may even develop a psychosis.

Any man suffering from impotence should, before getting married, have himself treated until he is cured; if his impotence is incurable; then, for his own sake and for the sake of the girl or woman, he should give up the idea of marrying. The only permissible exception is in cases in which the prospective wife knows the nature of her prospective husband's trouble and declares that she does not care for "gross" sexual relations and, therefore, does not mind the man's impotence. In case the wife is absolutely frigid, the marriage may turn out satisfactory. But, I should always have my misgivings; for should the wife's apparently absent but in reality only dormant libido suddenly awaken, there would be trouble both for husband and wife. It is, therefore, necessary to emphasize: in all cases of impotence—caution!

Frigidity

Frigidity is a term applied to lack of sexual desire or sexual enjoyment in women. Of course, before marriage many women are themselves ignorant of their sexual condition. Having learned to restrain their impulses, to repress any sexual stir, they themselves are often unable to say whether they have a

strong or a weak libido, or any at all. So, whether or not such a woman would derive any pleasure from the sexual act can be found out only after marriage is consummated. Many girls, however, know very well whether they are "passionate" or not, but they will not tell. They are afraid to confess to a complete lack of passion—they fear they might not gain a husband.

Frigidity as a factor in marriage may be considered from two points of view: the offspring and the husband. The offspring is not affected by the mother's frigidity. A very frigid woman, if the frigidity is not due to serious organic causes, may have very healthy children, and she may make an excellent mother. So far as the husband is concerned, a good deal will depend on the degree of the wife's frigidity.

If the woman is merely cold and herself not enjoying the act, but raises no objection to its performance, her frigidity cannot be considered a bar to marriage. As a matter of fact, many men who themselves are not overstrong sexually are praying for somewhat frigid wives. (It must be stated, however, that to some husbands sexual relations with a frigid and nonparticipating wife are extremely distasteful). When, however, the frigidity of the wife is of such a degree that it amounts to a strong physical aversion to the act, that should be considered a bar to marriage. Such frigidity is often the cause of a disrupted home, often leads to divorce, and is considered a sufficient cause for divorce or for the annulment of marriage.

Astigmatism

Astigmatism is a defect of the eye based upon some irregularity of the cornea or the lens, in which light-rays in different meridians are not brought to the same focus. This abnormality is to a certain extent, hereditary, but plays an insignificant role in the problem under consideration. It is an undesirable trait, but can not be considered a dysgenic factor.

Myopia

Myopia means nearsightedness. This defect undoubtedly is hereditary to a certain degree; but it is doubtful, other conditions being favorable, that any man would give up a girl (or *vice versa*) because she (he) is myopic. Still, if the condition is extreme, as it sometimes is, it should be taken into consideration. And, where both the man and the woman are strongly myopic, some hesitation should be felt in contracting a marriage. If the husband

alone is myopic, then the defect may be transmitted to the sons, but not to the daughters; these daughters, though, in their turn may transmit the defect to their sons but not to their daughters. In other words, the defect is more or less sex-limited.

Harelip

Harelip is a congenital defect, consisting in a notch or split in the upper lip. It is due to defective development of the embryo and, as a rule, is found in association with cleft palate. This abnormality probably is hereditary, but is not common and is not of much importance.

Criminality

Almost a complete change has taken place in our ideas regarding criminality, there being now but very few criminologists who believe in the Lombrosian nonsense of most criminality being inherited and being accompanied by physical stigmata of degeneration. The idea that the criminal is born, and not made, is now held by only an insignificant number of thinkers. We know now that by far the greatest percentage of crime is the result of environment, of poverty, with all that this implies, of bad bringing up, of bad companions. We know that the child of the criminal, properly brought up, will develop into a model citizen, and, *vice versa*, the child of the saint, brought into the slums, might develop into a criminal.

Then we must remember that there are many crimes that are not crimes, in themselves, but which are merely infractions of men-made laws, or represent rebellious acts against an unjust and cruel social order. Thus, for instance, a man or a woman who, defying the law, would give information about birth control and be convicted for the offense, would be "legally," a criminal. Morally, he or she would be a high-minded humanitarian. A man who would throw a bomb at the Russian czar or at a murderous pogrom-inciting Russian governor would be considered an assassin and, if caught, would be hanged. In making up the pedigree of such a family, a narrow-minded eugenist most likely would say that there was criminality in that family. But, as a matter of fact, that "assassin" may have belonged to the noblest-minded heroes in history.

The thinking eugenist, therefore, will pay little attention to criminality in the ancestry as a dysgenic factor. So long as the matrimonial candidate himself is not a criminal, the ancestral criminality should constitute no

bar to marriage. It is not likely to show itself atavistically in the children. Altogether, a good deal of nonsense has been written about atavism. Furthermore, people forget that the same rules of heredity that are applied to physical conditions cannot be applied to spiritual and moral qualities, the latter being much more dependent upon environment than are the former.

Pauperism

It may seem strange to discuss pauperism in relation to marriage, and to speak of it as a hereditary factor, but, it is necessary to discuss it, because considerable ignorance prevails on the subject, it being generally confused with poverty. There is a radical difference between pauperism and poverty. People may be poor for generations and generations—very poor and, still, not be considered or classed with paupers.

Pauperism, generally, implies a lack of physical and mental stamina, loss of self-respect, and unconquerable laziness. Of course, we know now that laziness generally rests upon a physical basis. But, whatever the cause of the laziness may be, the fact is, that it is one of the characteristics of the pauper. And, while we cannot speak of pauperism being hereditary, the *qualities that go to make up the pauper* are transmissible.

No normal woman would marry a pauper; and the woman who would marry a pauper is not amenable to any advice or to any book-knowledge. However, men sometimes are tempted to marry daughters of paupers if they happen to be pretty. They should consider the matter very carefully, for some of the ancestral traits may become manifest in the children.

Race

Nobody, I am sure, will accuse me of any racial prejudice—if I am ever accused of anything, it is of being too liberal. So, if I thought that marriages between different races were beneficial to humanity as a whole, I should not hesitate to say so. However, marriages between different races—for example, between the white and the black—are decidedly dysgenic, and such commixture of blood is injurious to each of the two races. The offspring from such miscegenation seem to inherit all the defects and none of the virtues of the original races. On this point, I am inclined to agree with Agassiz, who said:

"Let anyone who doubts the evil of the mixture of races and who is inclined, from mistaken philanthropy, to break down all

barriers between them come to Brazil. He can not deny the deterioration consequent upon the amalgamation of races, more widespread here than in any other country in the world, and which is rapidly effacing the best qualities of the white man, the Indian, and the negro, leaving a mongrel, nondescript type, deficient in physical and mental energy."

While marriages between members of different nations of the same race generally are beneficial and produce superior offspring, interracial marriages are decidedly dysgenic and not only should be frowned upon, but should be prohibited by the state.

Age

Great disparity between the ages of the wife and the husband is generally considered prejudicial. We may accept the general opinion, but it is necessary to bear in mind that each case is to be decided upon its merits. Many marriages in which the husband is twenty or thirty years older than the wife, and many marriages in which the wife is ten years older than the husband, have turned out to be very happy unions, so far as the relations between husbands and wives as well as the welfare of the offspring were concerned.

It is considered the proper thing for the husband to be five or ten years older than the wife. To this proposition, I can give only a halfhearted acceptance. For, it happens only too often that at the time the man begins to lose his potency the wife's sexual instinct just becomes fully awakened, and under those circumstances it is a bad thing for the husband to be older than the wife. On the other hand, as mentioned before, we know of many instances in which the wife was considerably older than the husband and which turned out happily.

I will, therefore, say that, so far as relative age is concerned, I would not formulate any ironclad or even definite rules. Each case must be decided upon its individual merits.

A man of sixty, for instance, fully preserved, in the full possession of his physical and sexual power, would make a better husband and better father than a man of forty or forty-five who is run down and sexually impotent or even merely sexually weak.

The statement that the children of aged parents are likely to be feeble also lacks scientific foundation. I know of many instances where the fathers were between fifty and sixty-six and, yet, their children were physically remarkably strong.

On the contrary, I believe that just the

opposite is liable to be true. A man who after the age of sixty is ambitious to become a father generally is of physical and sexual strength above the ordinary and is likely to transmit his qualities to his offspring.

Therefore, we repeat that, so far as the

ages of husband and wife are concerned, each case must be decided on its individual merits. For, if it is true that a man is as old as his arteries, there is no question about it that many men of sixty are younger than some men of forty.

Vaccine- and Serum-Therapy in Everyday Practice

VIII. Diseases of Bones and Joints

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from August issue, page 666.]

Acute Infections of Osseous Structures

EXCEPT in compound fractures, infection of bony structures occurs (acute osteomyelitis, osteitis, periosteitis) from within, through the blood stream. Those persons, therefore, who have some infection of the blood stream, such as furunculosis, typhoid fever, tuberculosis, syphilis, and the like, are specially predisposed to metastatic infections of the kind we are now about to consider. Some slight injury or exposure may then act as the exciting cause, by bringing about a local condition of lowered resistance.

Experience with Osteomyelitis

Thus, a boy once fell into the pit of a grain-elevator and struck his shin. No bones were broken. When, however, swelling and pain appeared, the doctor concluded that there was a fracture and applied a plaster cast, with the disastrous consequence that almost the entire shaft of the tibia was destroyed by the ensuing osteomyelitis. At another time, a boy suffering from furunculosis went wading in a creek early in the spring, when the water still was very cold. Within a few hours, he was seized with a chill, severe pain in the leg, and osteomyelitis developed; and from this he suffered for forty long years, the tibia being riddled with sinuses. A cure was finally effected by the removal of the greater part of the tibia.

It is plain that we cannot be too careful in diagnosing these grave conditions or too prompt in applying proper treatment, if we are to avoid disastrous results.

Some years ago, I was called to see a Russian boy who had considerable swelling and redness about and *just above* the ankle-

joint. The father and uncle of the boy had each recently recovered from an attack of acute rheumatic arthritis, preceded by tonsillitis; so, being impressed by the highly infectious nature of these conditions and the close connection subsisting between infections of the throat and joint-structures, I concluded that the boy had an arthritis of "rheumatic" character. But, treatment with streptococcus-bacterin and acetylsalicylic acid failed to bring about any improvement. After a few days, the swelling and redness extended somewhat higher up the leg, and the swelling took on that "boggy" or "doughy" feel which presages the presence of pus beneath. Then I realized that I had an osteomyelitis to deal with. It was with difficulty that I secured the consent of the father for opening the leg and chiseling a hole into the medullary canal of the tibia. Thus it was that I failed to remove enough bone; and, as a consequence, a discharging sinus persisted, even under continued bacterin-treatment, until a free incision was made and all necrotic bone thoroughly removed.

In acute osteomyelitis, the *general*, or *systemic*, symptoms may overshadow the *local* manifestations of the disease, with the result that this grave condition at times has been mistaken for typhoid fever, pneumonia or meningitis; and death may even take place within a day or two from the extreme toxemia. In most cases, however, the affected extremity becomes painful, helpless, and swollen; redness may not be evident, at first; tenderness is extreme, extending throughout the shaft of the affected bone, but most intense at one spot, so that palpation may be impossible. This disease is mistaken most often for acute rheumatic arthritis. However, in acute osteomyelitis, the joints are not involved, while the

bones are; and multiple lesions, so common in acute rheumatic fever, are rare so early in the course of osteomyelitis, though quite frequent later. A little later, the "boggy," edematous skin, together with redness and even fluctuation, make a mistaken diagnosis unpardonable.

Here, as elsewhere, I wish to impress the fact that bacterin-therapy is no "cure-all."

Once the medullary canal of the affected bone has been *adequately* opened, bacterin-therapy will surely shorten the drainage period and limit the amount of necrosis. When the diagnosis has been made, no time should be lost in affording exit for the pus. If a chisel is not at hand, free incision should be performed and one or more holes bored through the bone—by means of a sterile gimlet, if no better instrument is available. The main requisite is, that immediate exit be afforded the pus, which *at first* is confined to the medullary canal. Then follow with the bacterin (remembering that this is an exceedingly acute and toxic condition), making the initial dose correspondingly small, and repeating the bacterin, cautiously increased in amount, in twenty-four to forty-eight hours, as conditions warrant.

Two years ago, I followed out the plan of treatment outlined, in the case of a little German-Russian girl, with the most gratifying results. The child had complained of pain just below the knee for about a week, but the parents (farmers) did not call a physician until the presence of pus was evident even to themselves. When I was called, I discovered that the bone was infected through and through. Under anesthesia, I evacuated nearly a pint of pus, which had collected between the outer surface of the tibia and the extensor muscles of the leg. The next day, I had the little patient removed to my hospital, where I chiseled a hole about an inch in diameter into the shaft of the tibia, at a point where the infection seemed to centralize. The medullary canal was then thoroughly, but cautiously, cleaned out in either direction by means of a curette. The wound was left wide open, to afford free drainage, and bacterin-treatment was instituted. The wound was kept loosely packed with strips of iodoform gauze, and in a very short time discharge had ceased and the wound healed up from the bottom. There has been absolutely no trouble since then, even though the condition was a very bad one when treatment was begun.

In another case, in a 50-year-old diabetic, who came under my care a few months ago,

the x-ray showed a decided periostitis of the right radius, at about the middle of the shaft. Without the radiogram, this trouble would, doubtless, have been designated and treated as "rheumatism." Three doses of bacterin, in conjunction with salicylates and calomel, effected a speedy cure.

Chronic Infections of Osseous Structures

In a large proportion of the chronic infections of osseous structures, the tubercle bacillus is the primary infective agent, and treatment must be directed at the underlying condition; the use of bacterins alone will not effect a cure. Especially is this true when sequestra of necrotic bone are present. Bacterin-therapy will not cause the liquefaction and absorption of dead bone, so, the latter must be removed most thoroughly by surgical procedure. Localized collections of pus must be afforded free exit. Then an adequate determination of blood and lymph to the affected part must be secured by measures heretofore described in detail.

As regards the bacterin-treatment in these chronic conditions, it is extremely important that we know the exact nature of the organisms, both primary and secondary, with which we have to deal. In other words, whenever possible, we should, determine, the varieties of pathogenic microorganisms concerned by means of a bacteriological examination of the discharge. In many cases, the use of an autogenous bacterin may prove to be necessary.

As to tuberculin treatment, Allen recommends the use of the "bacillen-emulsion" in this particular class of cases, and further remarks that this may, advantageously, be a mixture of equal parts of those derived from the human and the bovine types of the bacillus. The initial dose recommended by Allen as safe is 0.00001 mil (Cc.). This dose is to be increased very cautiously—always avoiding a marked reaction—at intervals of not less than ten days. The treatment may have to be quite prolonged. Relapses are frequent.

The medicinal, hygienic, and dietetic treatment of these cases is, in general, the same as that heretofore recommended for other chronic and tuberculous conditions.

Acute Arthritis

Acute arthritis may be caused by any one of quite a wide variety of microorganisms, among which the following occur most frequently: staphylococci, streptococcus pyoge-

nes, streptococcus rheumaticus, streptococcus viridans, pneumococcus, gonococcus, bacillus typhosus, colon-bacillus, bacillus pyocyaneus.

In general, these organisms gain entrance to the joint via the blood stream. However, in surgical treatment of joint affections involving the opening of the joint-cavities, infection is very prone to occur, unless extreme precautions are observed to maintain strict asepsis. Occasionally joint infection takes place as the result of a punctured wound. It is needless to mention that in exploratory puncture or aspiration of a joint one cannot be too careful to secure perfect asepsis.

With the exception of the "rheumatic group" and the typhoid-bacillus, infection of the joint by any of the bacteria named is followed almost invariably by pus formation. Naturally, then, but little can be hoped for from bacterin-treatment, in these cases, unless proper surgical measures precede the administration of the bacterins. Microscopic examination of some of the pus obtained by aspiration will usually reveal the nature of the offending germ and, so, point the way to the proper variety of bacterin to be employed.

In many cases, free incision and drainage is inadvisable and unnecessary, and may lead to a greater or less degree of ankylosis. It is well first to try aspiration of the pus, followed by the injection of "Murphy's fluid" (a 2-percent solution of formalin in glycerin). The articular surfaces are then kept separated, and thus adhesions prevented, by the application of a Buck's extension or a suitable modification of it. If the joint-cavity should again fill with pus, it is again aspirated and more of the formalinized glycerin injected. This procedure is repeated until the exudate becomes sterile and serous.

In all these cases of purulent arthritis in which it is evident that infection has not taken place directly from without, the primary focus of infection is to be sought for, and appropriate measures directed toward its eradication, if possible. A focus of Neisserian infection in the seminal vesicles, epididymis or prostate gland demands proper treatment. Ofttimes a simple "cold," due to the pneumococcus, may have a sequel in an arthritis. Tonsillitis is notorious for causing metastatic infections of joint-structures, especially arthritides of a "rheumatic" nature. Pyorrhea alveolodentalis is also responsible for a considerable share of cases of arthritis, especially those of the chronic varieties. All these primary foci of infection demand proper

treatment, if lasting benefit is to be secured from bacterin-therapy.

Joint Tuberculosis

According to Dr. John B. Murphy, all cases of tuberculosis of joints begin *outside* the joint, and only later break into it. Consequently, the treatment should be largely prophylactic. Unfortunately, however, we usually see these cases only after irreparable injury to the joint has taken place. Concerning the treatment of the tuberculous cases, I can only refer the reader to what has been said in this essay with regard to the treatment of tuberculous osteomyelitis. But these cases come more properly under the head of orthopedic surgery.

In nontuberculous arthritis, small doses of bacterin are to be given at short intervals—of, say, one to three days—cautiously increasing the size of the dose, as clinical symptoms may dictate.

In gonorrheal arthritis, much larger doses of bacterin are necessary than those which have usually been employed. From 200 million to a billion killed gonococci form the proper dose. The interval between doses should be from two to four days in acute cases and from four to eight days in chronic ones. Ofttimes, in chronic cases, old ankyloses will require breaking up by forcible flexion and extension, under an anesthetic, and the use of an extension-apparatus. At the same time, a diligent search must be made for the primary focus—in the urethral crypts and sinuses, the epididymis, seminal vesicles, and prostate gland. Unless these foci of infection are gotten rid of, continual reinfection takes place and bacterin-treatment counts for naught.

In general, a differential diagnosis may be made between acute gonorrheal arthritis and acute rheumatic polyarthritis by the fact that the former, as a rule, attacks but one joint at a time, whereas the latter disease usually involves several joints simultaneously or in rapid succession. In doubtful cases, I should apply the "therapeutic test," by administering a dose of a proper "rheumatism-vaccine." If, after repeating this bacterin—in gradually increasing dosage—no favorable clinical results follow, resort might then be had to a serum test, such as the "complement-fixation test," specific for infections by the gonococcus.

Acute Rheumatic Polyarthritis

Acute rheumatic polyarthritis (acute rheumatic fever; inflammatory rheumatism) is

a condition in the treatment of which I am always very much interested, as it was in a case of acute rheumatic arthritis that I administered my first dose of a combined streptococcus- and pneumococcus-bacterin, nearly six years ago.

The patient, a farmer of about thirty years, had been the victim of several prior attacks, with the result that he had a badly leaking mitral valve when I was called to attend him on the eighth day of the attack. He was lying helpless in bed, both ankles, knees, one wrist, and an elbow being affected. To make matters worse, the man was coughing and suffering from dyspnea, and pneumonia loomed large upon the horizon as a possible complication. When I was called I was told (over the telephone) that the man was paralyzed. So, I had a very limited stock of remedies with me when I arrived at his home, out in the country.

Getting Interested in Bacterin-Therapy

I happened to have with me at the time two ampules of a combined streptococcus pyogenes and pneumococcus-bacterin, which I had received a few days before, as a sample. It seemed to me that here was an unusually fine opportunity to "try out" this (to me) new therapeutic weapon. I, therefore, administered the contents of one ampule. I also left a small supply of aspirin tablets, and administered a dose of calomel. The patient vomited shortly after taking the first dose of aspirin, so, took no more. Consequently, whatever followed must be ascribed entirely to the action of the bacterin.

About twenty-four hours after the administration of the bacterin, I made my second visit, and was surprised to find that moving about in bed caused the man but very little pain, and he could flex his joints to quite an extent. He stated that the pain was noticeably relieved within about four hours after the bacterin was injected. In forty-eight hours after receiving the bacterin, he was able to sit up in a chair. Five days from the date of my first visit, he drove to town and came to my office. I then injected a second dose of bacterin, to prevent, if possible, any return of the trouble.

Since that time this man was entirely free from rheumatic attacks until about a year ago, when he had a light attack affecting his shoulder. One dose of bacterin was sufficient to cure this attack, also.

This man, when I first attended him, was drinking heavily; he had a bad heart; he was in the eighth day of the attack when I

first saw him, and no treatment had been applied, save "old women's remedies"; also, he was on the verge of a pneumonia. A more unfavorable combination of circumstances could hardly be imagined; yet, the bacterin gave most brilliant results.

It so happened that a number of such cases came under my care within the next few months, and in none of them did the bacterin fail to do the work. Since that time, I have used bacterins in a large number of cases of this stubborn and dangerous malady. In cases in which endocarditis had not already developed, I have never seen this lamentable complication to occur. This alone is worth while, as every reader knows in how large a percentage of cases of acute rheumatic arthritis endocarditis is a complication, and with an irremediably crippled heart as the result when the conventional treatment with salicylates is relied upon.

An Interesting Case

Out of the many cases of this disease which I have treated during the past six years, one appeals to me as being of special interest. A daughter of my first "bacterin-patient" suffered frequent attacks of acute follicular tonsillitis and nearly every attack of tonsillitis would be followed by a corresponding arthritis, affecting both ankles and sometimes a knee. Finally, the condition was become chronic and the ankles became so weak that I had to have a pair of braces made to support the joints. I kept telling the parents that the rheumatic attacks were due entirely to the diseased tonsils (the result of a severe attack of diphtheria, in the first place), but they could not understand how a disease of the throat could possibly have any connection with trouble at the opposite extremity of the body. At last, when my patience was about exhausted, I prevailed upon them to allow me to enucleate the girl's tonsils. Since then, the rheumatic attacks have entirely ceased and she has been perfectly well for a year. The ankles soon became strong and able to support the weight of the body without the help of braces.

One must always look for some primary focus of infection in these rheumatic cases; and usually it will be found in the tonsils, tooth-sockets or the accessory nasal sinuses. Until these primary foci are effectively cleaned, satisfactory results from bacterin-treatment cannot reasonably be expected.

In the treatment of these acute cases, I at first employed a straight streptococcus-

pyogenes-bacterin (polyvalent, stock); but, since becoming familiar with the work of Rosenow upon the mutations which take place in the streptococci as the result of variations in environment, culture-media, and so on, I now use a bacterin containing various strains of staphylococci, the pneumococcus, and the different varieties of streptococci (streptococcus pyogenes, streptococcus rheumaticus, streptococcus viridans, etc.). It is extremely unlikely that any one variety of microorganism is responsible for every case of acute rheumatic arthritis; hence, the combined bacterin.

A good initial adult dose in these cases would be: staphylococcus aureus, 50 millions; pneumococcus, 25 to 30 millions; streptococci, 30 millions of each variety present in the bacterin. The interval between doses should be from twenty-four to forty-eight hours, until improvement is manifest; then at longer intervals—of three to seven days—until the condition has entirely cleared up. It is also well to employ large prophylactic doses at monthly intervals, until one is certain that recurrence will not take place.

Value of Bacterins for Diagnostic Purposes

In concluding the consideration of acute rheumatic arthritis, I wish again to lay especial stress upon the necessity of using great care in making a differential diagnosis between this condition and acute osteomyelitis. The differential points have been detailed when we were considering the latter disease, so, they will not again be gone into at this time. But one must be ever on his guard, or the consequences may prove disastrous.

The bacterins may be put to another important use in this class of cases, namely, the making of a "therapeutic test," to differentiate acute rheumatic from acute gonococcic arthritis.

In the absence of conclusive evidence of a primary focus of gonococcic infection, a *diagnostic dose* of 500 million killed gonococci may be injected into the subcutaneous tissues of some part of the body far distant from the affected joint. If within twenty-four hours there is a focal reaction, as evidenced by increased pain and tenderness in the affected joint, followed by marked improvement a little later on, this may be accepted as conclusive evidence of the specific Neisserian character of the infection. Again, if this test should prove negative, a dose of 100 million killed streptococcus rheumaticus may be administered, in the same way, and

the presence or absence of focal reaction observed.

Chronic Arthritis

What has been said about chronic osteomyelitis due to the tubercle-bacillus applies equally to chronic arthritis due to the same infective agent, for the reason that the pathologic process begins outside the joint-cavity, and invades it only secondarily. These cases, also, come more properly under orthopedic surgery, as they are strictly surgical.

In *non-tuberculous*, subacute, and chronic "rheumatoid" arthritis, bacteriologic cultures from the joint-structures and blood stream show the presence of various types of streptococci, namely, streptococcus rheumaticus, streptococcus viridans, and other forms of this protean germ. Other bacteria that may be concerned are the staphylococci, bacillus coli, gonococcus, bacillus Friedlander, and various diphtheroid organisms. Sometimes, it would appear, the bacteria are not located in the joint-structures, but are in some primary focus in a distant organ or tissue, their toxins being carried by the blood stream to the joint, the latter representing a "place of lessened resistance."

In all these chronic cases, therefore, a strict search is to be made for a primary focus of infection; the most likely locations being the tonsils, tooth-sockets (pyorrhea), accessory sinuses, colon, kidneys, urethra, prostate gland, seminal vesicles, vagina, cervix uteri, and fallopian tubes.

Where the bacteriologic diagnosis is not clear and when a combined polyvalent stock bacterin yields negative results, an autogenous bacterin will often give satisfactory results. Billings, Rosenow, and Murphy have achieved brilliant cures in cases of many years' standing, by preparing autobacterins from organisms obtained from the tonsils, pyorrheal pockets, and blood-cultures.

In one case of arthritis deformans, three injections of a combined stock bacterin yielded, in my hands, a very satisfactory improvement in the condition, as regards mobility of the joints, and relief of pain and tenderness. Unfortunately, this patient passed from under my observation, so, I have no means of knowing what the ultimate results might have been. But, the improvement was very encouraging.

Large doses of bacterin are necessary in these chronic conditions, and the intervals between inoculations should be comparatively long, say, a week to ten days.

[To be continued.]

Therapeutic Indications in Typhoid Fever

By A. L. NOURSE, M. D., Sawyerville, Alabama

TYPHOID fever and paratyphoid fever will in this paper be considered together although the differences in severity and the bacteriological causative factors of these diseases are recognized.

The time will come when an awakened public will demand the same disease prophylaxis in civil as in military life; then typhoid fever will be a mere matter of interest to those delving into the history of medicine. Until already known and fully recognized measures of prevention, both by vaccination and hygienic precaution, are universally adopted, instead of receiving sporadic attention, to the unavoidable imperilment of entire communities, it remains the duty of the therapist to reduce still further the death rate of this scourge.

Many conscientious practitioners still are so skeptical in the matter of the scientific employment of internal medication that they prefer to confine themselves to prophylactic measures, hydrotherapeutic treatment, and regulation of diet; the use of other agents being confined to the control of some of the grosser manifestations. On the other hand, the enthusiastic modern internist sees in no disease a greater field for the successful application of therapeutic resources than he does in typhoid fever. The modern internist believes that the sponging, or other balneologic measures, when properly employed, are absolutely indicated, since they maintain external cleanliness, reduce fever, by means of evaporation, and, in special cases, by the actual contact of the fevered body with substances of lower temperature. Great conservatism should be exercised in the use of ice and ice-water even in hyperpyrexia.

However, he goes further and insists that the "bathing" should include the entire alvine tract with antiseptic-charged liquids, and include in it everything, from the fevered lips and tongue to the principal lesions which, pathology has taught him, exist in Peyer's glands, together with the hyperplastic surrounding and continuous structures of the jejunum, ileum, and, to a variable extent, the large intestine, as well as to the terminal portion and rectum, which though not so directly involved, yet, are a part of the diseased alimentary tube.

Further, the internist realizes that the principle of treatment must be carried further, to relieve a system laboring to absorb and

neutralize both the bacteria invading it and their toxic products, without allowing them to run a full life-course to that classic point of self-limitation.

This adds to the problem of maintaining intestinal asepsis (more properly, bacterial balance), that of assisting nature in its attempt toward toxin elimination, and in giving it material for repair of excess waste, while the body is unable to draw upon its normal food supply, which can not be given without its becoming mechanical detritus and a culture-medium for inimical organisms.

In typhoid fever, even more than in most disorders, we have such a variety of atypical cases—owing to the varying resisting power of the individual, either through special sources of immunity or variations in the general opsonic index—that an immense range of therapeutic indications may be presented. One indication is ever there, be the case one of a typhoid-carrier (always provided we can round him up), the ambulatory case of paratyphoid fever, the delirious sufferer from hyperpyrexia or "typhomania," or the instance where the typical fever-curve is represented by asthenic subnormal temperature and a rise to normal in the evening. This always-with-us indication is for the intestinal antiseptic above touched upon.

Destruction of Intestinal Typhoid-Bacilli

That destruction of the typhoid-bacilli within the intestinal canal is possible, can no longer be denied by anyone who will follow the results of experiments with typhoid-carriers. In visiting, or having him visit oneself, which is often the case in ambulatory types and during the prodromes, the exhibition of the intestinal remedies may be begun while the diagnosis still is tentative and long before it can be confirmed by the Widal test. And the beauty of it is, that the treatment will be a beneficial one, even if the tentative diagnosis is in error or if, as certain practitioners believe, the disease is occasionally aborted.

Following out the cardinal principle of cleaning up, the writer always prescribes a cholagog, the usual one of his preference being three or four tablets containing calomel and podophyllin, of each gr. 1-6; bilein, gr. 1-8; with strychnine, gr. 1-250; at half-hour intervals, and followed in three hours or the next morning by a laxative saline. Mag-

nesium sulphate, best given in the form of a purified effervescent salt, especially appeals on account of the known hyperplasia of the intestinal surface; this salt being indicated in practically all acute hyperplastic conditions, *wherever found*.

Follows the intestinal antiseptic. Many drugs have been used and are being used for this purpose, but of late those in practically universal use are the sulphocarbolate (phenol-sulphonate) group of salts. A readily soluble and aromatized tablet, containing 5 grains of the sulphocarbolates of lime and sodium, and containing a little bismuth subsalicylate, is the usual selection. One or two of these are to be given dissolved in half a glass of water, and followed soon by as much water as the patient cares to drink. The usual administration is at intervals of three hours. Diarrhea symptoms call for the tablets carrying the zinc salt in addition, the others to be resumed with its subsidence.

The sulphocarbolates are safe in any reasonable dosage, and the amount mentioned is but a working average for adults. In giving to children, Shaller's rule applying to toxic and active agents may be very much stretched, say, doubling the amount figured. The cases of typhoid fever in young infants are hardly a factor to be reckoned with, owing to their extreme rarity. During the night, when normal rest is secured, the regular administration need not be insisted on, but it is worth remembering that the bacillus typhosus keeps about the same office-hours as do the male and female denizens of the red-light locality of a wide-open town; therefore, awakening a patient at four- or five-hour intervals for the administrations is a justifiable procedure.

The Sanitary Regulations

It will be seen that the therapeutic start is made with the cleanout by means of cholagog and gentle saline catharsis (both measures to be continued as indicated during the course of the illness) and with the inauguration of the intestinal antiseptic line of treatment, measures to be undertaken coincidentally with the preventive protection of other members of the family and the community. Where a complete and proper system of sanitary inspection exists, this part of the attending physician's duties is simple. Merely report the case and give special instructions regarding disinfection of stools, urine, and also sputum, together with utensils used by the patient, and such instructions regarding regulation of the using of water, milk, and food as seem applicable; any co-

operation being, of course, extended to the constituted health-authorities.

Where a negligent and backward community still lacks proper sanitary regulation and administrative carrying-out, the attendant should become as busy as the everpresent neighborhood busybody; the difference between his activities and those of the modern Polonius being that they will be in a good cause. Investigate that benighted horror, the open closet, the well or other water supply, the milk and food supplies, together with the habits of personal cleanliness or otherwise, of the family. End with a lecture, as laconic or as verbose as time and disposition of the giver and the receptive mood of the audience dictate. Let the beginning be on typhoid vaccination and make an impressive ending with the above-mentioned putrid and pestilential abhorrence.

As for a general antiseptic and disinfectant, this will be a good time to begin using the new chlorazene, now Americanized and simplified in name, but of most ample foreign and domestic laboratory proving, as well as clinical demonstration—incidentally of most emphatically logical chemical formula to such of us as are interested especially in chemistry. This seems to be destined to supersede largely many antiseptics for external use, and for disinfection of utensils and clothes, for treating typhoid stools, for washing the attendant's hands (in 1-10- to 1-2-percent solution), as well as for gargles and sprays. It is an agent most emphatically not to be overlooked.

Antipyretics in Typhoid Fever

Now as to the exhibition of antipyretics in typhoid fever, we do not consider it the best of modern practice to use those agents which influence temperature by directly affecting the thermic center or by lowering vitality in any way—consequently we eschew coal-tar antipyretics. That class of remedies which in any way aid temperature reduction, through equalization of circulation and by aiding nature in elimination, thus being secondarily, although often promptly, anti-pyretic, we consider emphatically called for and essential aids to such hydrotherapeutic measures as are indicated, but often impossible of ideal attainment.

Aconite heads the list in point of frequency of indication. We can read in many works that aconite is to be used only in sthenic fevers or at the beginning of continued fevers. Most truly the administration of maximum doses of aconite, as a routine, in any fever

would be a most dangerous procedure, but, with an accurate liquid preparation or with the hydrobromide of aconitine, its principal active constituent, at command, the case is reversed.

Here we have a reliable, quickly eliminated equalizer of circulation and sedative to the heart, by relieving it of the necessity of pumping against an abnormal circulatory periphery. With elevation of temperature and the *small, frequent pulse*, we give aconitine at frequent intervals; Shaller's rule for age regulation being a good one to follow, but weight and individual characteristics also modifying dosage. Mere weight does not, of course, give an indication for increase of dose: weight may be from adipose tissue and result in a decreased area of drug-receptive surface; 1-800 grain of this reliable, quick-acting and quickly eliminated agent, given every thirty minutes and dosage modified by above rule, is a safe basis to go on. Always have it withdrawn on falling temperature or with established diaphoresis.

Thus governed, the drug is as safe in typhoid fever as in other disorders. The dosology in disease, except as aiding in prophylaxis, promoting knowledge of causative microorganisms and giving an idea of what to expect in the way of symptom complexes, has no value in the treatment of disease-symptoms. However, in typhoid fever we contend so frequently with pulse and temperature change that aconitine is well given with minute doses of cactoid and digitalis and the usually indicated strychnine.

Cactoid, being a remedy of special value in irritability of the myocardium and its controlling nervous mechanism, is well given throughout the disease, as is also strychnine in small dosage, the valeriate being a good selection for continued use, because of the sedative influence of the valerian radicle.

The "dosimetric trinity" often makes a splendid combination with which to give aconitine, as does also the "defervescent compound" where fulness and hardness of pulse suggest veratrine addition, a condition sometimes met with in typhoid fever. Digitalin, singly or with the "dosimetric trinity" combination will be almost a routine, overdosage and cumulative action being guarded against; we have here a most excellent diuretic and synergist of cactoid, which is well used as an alternant during extended exhibition.

Echinacea a Valuable Adjunct

And now comes attention to the *one drug*, in addition to the sulphocarbolates, prac-

tically always given by us. Echinacea, in some form, usually a grain every two hours, during evidence of active toxemia, of the concentrate, echinacoid; later, increasing interval and decreasing dose, in evidences of active sepsis increasing amounts being given. Supported in its use by our own extended experience, by the immense amount of corroborative testimony of others, and by the now increasing laboratory evidence, we give this agent in all conditions of blood disorganization, whether from the injection of the cell-destroying snake venom or from bacterial invasion, believing that the writer who first applied to echinacea the name "vegetable bacterin" chose that appellation most aptly. There are no toxic effects from anything like reasonable dosage (none from any that come to recollection), and it is a useful adjunct, to be fearlessly pushed hard. Its mention completes the outline of a system of treatment which, combined with dietary regulation, will enable us to keep down the complications to a minimum, or even to prevent severe cases of enteric fever. Those who decry medication will see an abnormal percentage of paratyphoid fever and mild cases.

Baptisia in Order

Baptisoid must, however, be borne in remembrance. When venous stasis in the peripheral circulation is evidenced by purplish discoloration and the mucous membranes are deeply colored, though not red, the specific indications for baptisia (the physiological action of which is that of a heart stimulant, cholagog, regulator of capillary circulation, and, in very large dosage only, a cathartic) are present. It should at once be pushed. A safe and certain agent is this American drug, wild indigo.

Local applications over the right iliac fossa are of assistance. The old-fashioned turpentine-stupes also are good; hot applications of nearly saturated solution of magnesium sulphate are to be remembered (also indicated in the splenic engorgement which often is present), and a kaolin-glycerin base, carrying guaiacol or other antiseptic, is, by no means, to be ignored.

A Summary of the Treatment

Use these measures, and, to reiterate, saturate the patient with echinacea, calcium sulphide being used as alternate, if desired; then push the sulphocarbolates until the small amount of the bismuth salt, used as index, ceases to turn the stools black; support strength by indicated measures, of which

nuclein and arsenic are valuable, not forgetting a ferrous salt; use just enough strychnine and digitalis to brace, without overdoing it—and it will be found that hereon hang all the laws; unfortunately not all the prophets.

Complications will be few, but for "typhomania" and the low forms of autotoxemic delirium use the small and repeated dose of hyoscine hydrobromide. Gelseminine occasionally will be useful with a high temperature, flushed face, tight pupils, and indications of brain hyperemia; but hyoscine is preeminently the remedy in "typhomania," as, in using our other potent and effective active agents, it will be used with care and with knowledge of its physiological action. Give the small dose and repeat, remembering that more can be given and that overdosage means increasing strain toward maintenance of physiological balance, by introduction of therapeutic antagonists, where the desideratum is, to use just the proper amount of any one agent to get effect.

If hemorrhage is seen, it will usually be in a case treated in other ways, and the indications will be the same as when the condition arises in other diseases. The instant requirement if, is to relieve excess pressure on the area giving rise to the hemorrhage. This means, dilating the capillaries, and the first thought will be glonoin—sucked up in the mouth, unless collapse calls for the needle—atropine, with adrenalin frequently; 1-2 grain of emetine being also well indicated. Oil of erigeron, 5 or 6 drops on sugar or in capsule, may be the keynote of the subsequent treatment, which will involve moreover the consideration of hamamelin and hydrastine. A lime salt is called for if not already included in the treatment, and the calcium-creosote combination meets the requirements well, as creosote increases the coagulability of the blood.

The sudden and untimely fall of temperature, resembling termination by crisis of

certain other disorders, is always to be looked upon as a grave danger-signal. Hope for termination by "artificial crisis," but look for intestinal perforation. The immediate therapeutic indications are, heat and strychnine nitrate, although it must not be forgotten that, where perforation is diagnosed and immediate surgical interference feasible, the indication is absolute.

Bed-sores are a complication no more to be considered in a properly-treated case, with even reasonable attention to nursing directions, than is the erstwhile hospital-gangrene to be expected in any excusable surgical procedure: if present, such sores will be treated under their surgical indications.

A glimpse at diet will be made in conclusion. We have always been rated as a "starver," but, since using the Bulgarian bacillus with our milk, and employing conservatively papain (the vegetable digestive operating in either acid or alkaline media) we have been a bit more liberal. At the same time, it is to be remembered that the nutritive material, that is capable of absorption by the limited working-surface of the gastrointestinal tract, and the reduced power of giving secretion and making absorption and final distribution, must not be pushed in the effort to save the body from its living temporarily off its own stored energy. Here is a problem definitely stated, and it is left for everyone to find his own x . Preference for error on the side of limitation is here confessed to.

Shall a little brandy or other alcoholic be permitted to sustain the strength? Too much chemistry already. Why add to the human laboratory the task of oxidizing alcohol? This remark is made with all due respect to those who still think otherwise, but the absence of booze in the battle seems to clarify it a bit.

Antiseptics inside and out, and watch the symptoms, while giving all possible supportive aid in the capacity of nature's coadjutor.



The Doctor's Office

How to Arrange and How to Equip It

By RALPH ST. J. PERRY, M. D., Minneapolis, Minnesota

THE choosing of the site of the doctor's office will depend a great deal upon the custom of the profession in his locality as well as upon the nature of his practice. In many places, particularly in the eastern cities and also in country villages generally, it is the custom for the physician to have his office in his residence. In the larger western cities, physicians are more given to grouping themselves in office-buildings or over drugstores in the smaller business-centers found in the residential districts. There are pros and cons regarding each location; usually it is best to "do as Rome does," unless there are special reasons for deviating from the local custom.

A young man or a new man who is starting in to build up a general, or "family," practice often will fare better by having his office at his home, until he is well established in that neighborhood; after which he may open up a "downtown" office, when his following will not forsake him. The specialist can open up downtown at once, for his business will not depend upon family conditions, and he must be accessible to patients from all parts of the city and to those from out of town arriving by the railway and interurban electrics.

For a long time there was much mooted over the groundfloor and the upstairs office. If the office-building has passenger elevator service, there is nothing against the upstairs office and much in its favor; if there are no elevators, the groundfloor has greater advantages. The disturbance from street-noises is offset, many times over, by the number of ailing ladies and small children, and the crippled, weakly, and senile who cannot easily climb a flight of stairs. Other things being equal between doctors, as they frequently are, the one with the most conveniently accessible and comfortable office is going to get the patients—for the first time, anyway. A main-street office is preferable to a side-street one, as it is easier to find, is generally easier of access, becomes better known, and is a constant reminder to the passing throng of one's existence and business. These are factors which big business corporations (e. g., United Cigars, Rexall) consider worth thousands of dollars as "business-getters."

Proximity to other business institutions needs consideration. Get near the most popular, best-known or best-advertised general

store, if possible; its crowds of customers mean publicity and prospective business for you. Rooms over a drugstore are good, provided you are not related to the druggist, for in this event too many people will think of collusion and "graft." Saloons, butcher-shops, and undertaking establishments are taboo, as they drive away business and invite sarcastic comments.

Be Careful About Professional Associations

Associating yourself with another professional man is pleasant—sometimes; but, in a small city, a specialist should not associate with a general practitioner, as such an arrangement will soon lead to the insinuation that he is referring general work to his associate; and this petty jealousy often will cause trouble for both parties. The general practitioner can associate himself with a dentist or even with a lawyer without agitating the green-eyed monster; and such an arrangement frequently is ideal, as there is much community of interests, without any business antagonism. Several specialists whose fields of operation do not conflict can advantageously office together. Medical partnerships, unless there be an equality of attainments, education, and effort, and an equitable division of work and income, are prone to prove unsatisfactory. Mostly one partner excels or becomes dictatorial or "grouchy" or lazy, or patients "switch," and the dove of peace gets its feathers so badly mussed up that a dissolution of the firm, and enmity follow.

As to the size, arrangement, and equipment of the offices, much will depend upon the character and extent of the clientele to be catered to. Present requirements are vastly different from what they were years ago, and greater. I well remember my grandfather's office, of fifty years ago: at the corner of the lot, a building of two small rooms, each about 8 by 10, which served as reception-, consultation-, and drug-rooms, as surgery and laboratory and workshop. And in that office he examined patients, operated upon them, made braces, applied plaster-paris dressings, rolled out pills, and did all the numerous et ceteras that went to make up a general practice in the '60s. I could put the whole outfit into my present reception room! And this two-small-room office was in vogue up to

the '80s. Today, legal requirements and the demands of the public call for at the least three rooms—reception-, consultation-, and operating-room.

Make a Modest Beginning

When I began the practice of medicine I had an ideal office-equipment in mind, but lack of money and a bit of advice prevented me from turning the ideal into a reality. One of my business friends, not an M. D., but a man of wide general experience, told me that it made a much better impression upon the people to start with a modest beginning and then gradually to increase one's equipment; thereby giving the impression of acquired prosperity, rather than inherited wealth, which a too resplendent initial showing would present.

I believe the man was right; that it sounds better to have people say, "Well, I guess Doctor Blank must be building up a good practice, because he keeps adding to his office and getting in new stuff," than it is to listen to remarks such as, "O yes, Doctor Blank opened up with a big flourish and a swell office, but he doesn't seem to have much practice."

Wherever you locate your office, see to it that you have all possible modern conveniences in the way of heat, light, electricity, hot and cold water, sewerage, compressed air, gas, telephone, handy and well-kept toilet rooms for ladies and gentlemen, janitor and elevator service, window-screens, storm-windows, fire-extinguishers, and everything else you can think of that may tend to reduce the worry, effort, and risks of your business.

The annexed sketch (Fig. 1) represents the plan of an office-suite that can be started as a modest two- or three-room office and then gradually expanded, as required.

The Reception-Room

The reception-room (Fig. 2) should be at least 10 by 15 feet, with windows enough to provide good ventilation, but, yet, not admit too glaring a light. Charcot, who was a past-master in psychic effects, used to have his reception-room almost dark, the lamps being subdued with colored globes and shades, while the consultation-room was brilliantly lighted, so that, when he appeared to receive the next patient he seemed to be surrounded by a halo. Furthermore, the decorations should be in mild hues, in fact, the whole color-scheme of the reception-room should be one of soft harmony rather than a chromatic syzicopation. Rugs, pictures, draperies, floors, woodwork, and furniture should be

included in this arrangement. There are several paint and alabastine firms who will gladly assist in this matter without cost to you.

Your furniture should be substantial enough to withstand incidental wear and tear;

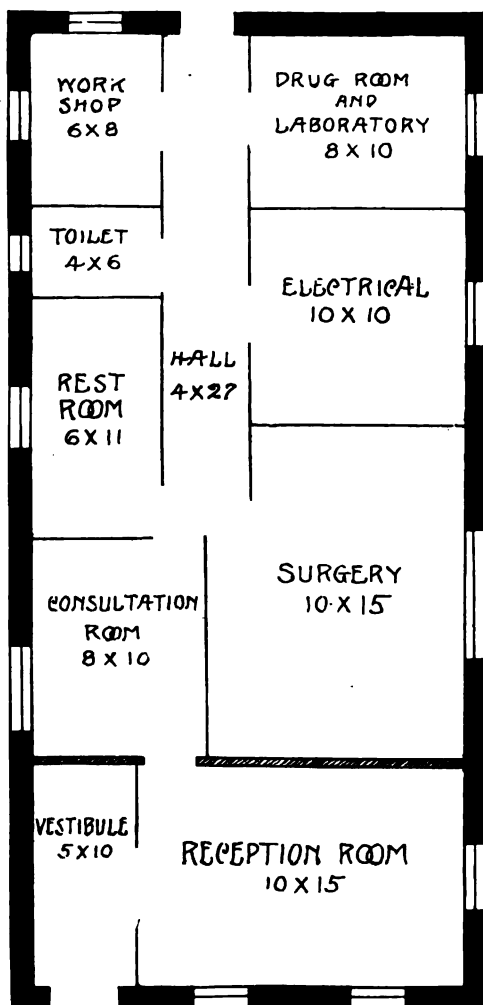


Fig. 1. The office plan.

plain, so that it will not catch dust and harbor germs, and of a finish which does not show scratches, nicks or marred spots. But even with these restrictions, you have your choice between a number of artistic styles, such as mission, Sheraton, Heppelwhite, and so forth; while as to finish, there are at your command several of the dull or rubbed varieties for mahogany, oak, maple, birch, or other wood of your selection.

Complete office-outfits that are eminently satisfactory can be purchased from dealers,

and for these the neophyte may pay in installments if he is pecuniarily anemic. Such an outfit should consist of two or three settees or several plain chairs, one or two rockers, a center- or library-table, pictures, waste-basket, umbrella-stand, rug, and a table-lamp. To these may be added a clock, flower-stand or -basket, desk for office-girl,

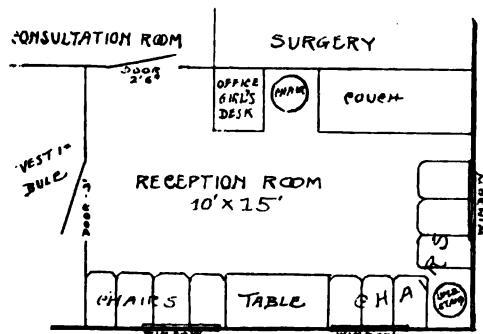


Fig. 2. The reception room.

mirror, costumer, magazine-rack, besides whatever other individual bits your needs may call for or fancy suggest.

A word as to pictures. Personally, I do not like the idea of displaying "medical" pictures in the reception-room, or stuffed birds and animals or mounted insects or other deceased fauna. Suggestive and "sporty"

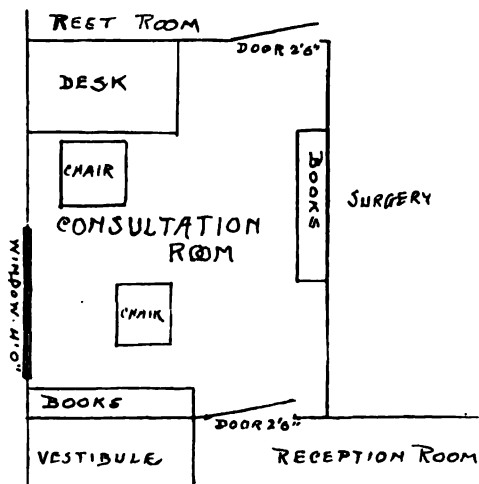


Fig. 3. Consultation room.

pictures should be excluded. There are available, thousands of bits of American scenery, historical scenes and buildings, and other interesting subjects, and if perchance you have traveled and know of these places personally they often will afford an opening

for entertaining conversation. Your diploma and licenses may be displayed in the reception-room, but the consultation-room is a better place for these. Do not display the originals, as they are too valuable and cannot be replaced if lost, but rather have photographic reproductions made, keeping the originals in a fireproof vault.

Current magazines and daily newspapers help to hold waiting patients. In selecting these, choose those of a light character or, if of a scientific nature, select the "popular" kind that are full of short articles. One of my globetrotting friends several times has remarked to me that one great difference between the offices of American and European physicians is, that the literature served by the

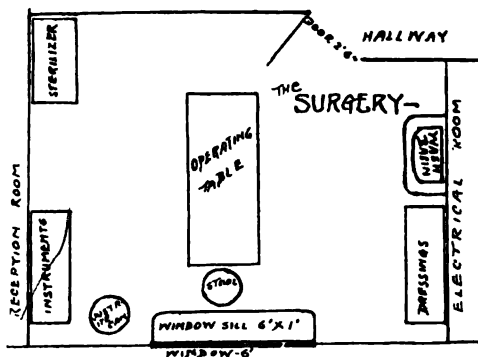


Fig. 4. The surgery.

former is from one to five years fresher than that found in the latter.

The Consultation-Room

The consultation-room (Fig. 3) is the place where you talk matters over with patients, listen to their tales of woe, and where the business affairs of your services are conducted. Examinations, treatments, and operations are performed in another room or else in a part of the consultation-room partitioned off for that purpose. Consequently, the consultation-room need not be larger than 8 by 10 feet, as all the space required is just enough for your desk, desk-chair, patient's chair, besides one extra, and not too comfortable, chair. I say, "not too comfortable," as it is a good idea to discourage the presence of a third party during the consultation. The consultation-room should be finished off in light colors, say, colonial yellow and white, or some such combination as will make the room light and cheerful. Your book-cases can be arranged around the walls, while the spaces between or above are hung with diplomas, licenses, certificates of postgraduate

work, portraits of medical and surgical celebrities, and so forth. Here, too, you can display small family photoportraits, as of your wife, children, parents, and such of your ancestors as may have been physicians or have acquired celebrity in other directions.

In arranging the furniture of this room, place your desk so that the light will be

these gentry, when they get to the nudgeup point of their eloquence, as to find themselves seated in a chair that makes nudging unpleasantly difficult and renders the desirable approximation impossible. The third chair I have mentioned above—well, mine is a short-legged stool.

A magazine-rack for current medical literature is desirable, but, mark this, all professional literature should be kept where patients cannot gain access to it. Many a practitioner has lost a good many patients by leaving literature in his reception-room where it was looked over by waiting patients, who wot not of technical readings, but who "wotted" a whole lot of the advertising pages, filled to the brim with the claims of "ethical" proprietary medicines for numerous named diseases. Finally, no consultation-room is complete without a commodious waste-basket.

The Surgery and Laboratory

The surgery (Fig. 4) in a small office-suite answers three purposes, those for examination,

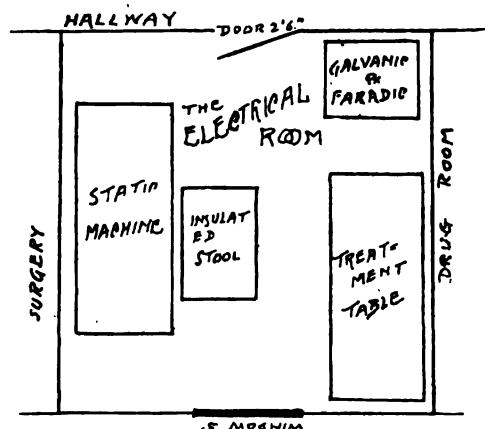


Fig. 5. Electrical room.

behind you when you face the patient. It is of no import for your own visage to be illuminated during a consultation, but all-important that the full light fall upon the patient's face; the play of the patient's features (or of the friend's present) often counts for as much as the spoken word, and sometimes even more. For evening work, your desk-lamp should be so adjusted that its light can be thrown full upon the patient, leaving you yourself in the shadow. Suit yourself as to the kind of desk chosen—whether rolltop, flattop or dropfront—but at all events get one that will accommodate your correspondence and accumulated loose literature without its top being all littered up. It is only the "brainy" and "literary fellers" who are permitted (!) to have disordered desks. (Q. v.)

The doctor's desk-chair should be comfortable, and may be swiveled and cushioned or a plain stool, as suits him best. The patient's chair should be comfortable and of a solid, extra-heavy construction, almost immovable, in fact: for, we want the patient to "stay put" when we get him in the most advantageous light. Also that same chair frequently is occupied by a book-agent, detail-man or some genial purveyor of beautifully lithographed and gilt-sealed paper who wants to "let you in on the ground floor"; and I have found nothing so disconcerting to

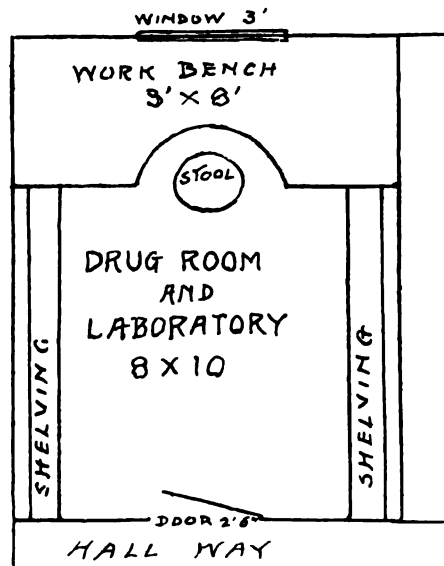


Fig. 6. Laboratory.

treatment, and operating. If one is pinched for space, it also serves as a laboratory and drug-room.

This room should be large enough to hold all of your treatment and operative paraphernalia, while allowing for plenty of working-room. In a small office, this means compactness of furniture and the utilization of all wall-space possible. The walls and ceiling should be enameled in white or very

light green or blue tints, and be striped or stencilled in the complementary colors or in silver or gold, in order to break the monotony. The woodwork should be in white, while the floor is made waterproof with a crack-filler and finished with an elastic white paint or good enamel; or it may be covered with a tile-patterned linoleum or congoium, or else a cement or encaustic tile flooring may be laid.

The equipment of the surgery may be itemized as follows: An instrument-cabinet;

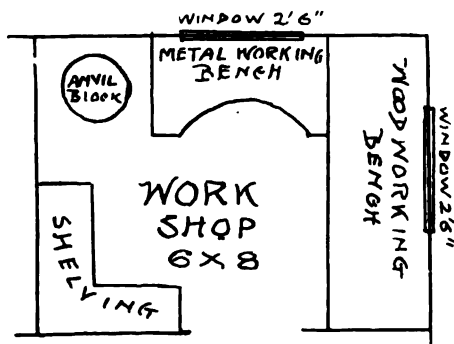


Fig. 7. Work shop.

an operating-chair or -table of simple mechanism, but which will afford every needful position for examinations, treatments and minor operations upon any part of the body, and be provided with hand- and foot-rests, leg-holders and leg-straps, an irrigating outfit, Kelly pad, and slop-jar; further, a large window-shelf or else a small two- or three-shelf instrument-table in lieu thereof; a cabinet for dressings; shelving for drugs; small sterilizer; stools for surgeon and patient. No unnecessary piece of furniture should be allowed to take up floor-space and be in the way. All steel and wooden furniture should be white-enameled, all smooth metal work nickelplated, and all rough metal black-enameled. All white enamel should be water-, blood-, and soapsuds-proof, and should not turn yellow with age.

The surgery should have installed running water, and at one side of the lavatory there may be built a small laboratory for making urinary tests, bacteriological examinations, and, doing such other laboratory work as the doctor may want to carry on. Plans for these small laboratories can be found in several textbooks and guides to laboratory-work.

Electrical apparatus in a compact office must be built along vertical lines, hence, a wallplate is better than a table-outfit. If your work increases, you can install a com-

plete electrical plant in a separate room (Fig. 5). Electricity, today, is used chiefly in making examinations and in the conservative treatment of some conditions where we can not, should not or dare not use the knife. Diagnostic lamps call for a darkened room or corner, which can easily be arranged by means of movable screens, partitions or curtains. In the x-ray equipment, unless you intend to go deeply into roentgenology and specialize therein, I would advise the static-machine equipment, as this gives a light strong enough for bone- and foreign-body work, while the static current is valuable in the treatment of many neurotic and organic pathies. Should a separate electrical room be equipped, its walls, floors, and ceiling should be dark colored; the curtains in two sets, one for ordinary use and one of some impenetrable black cloth; so that all extraneous and reflected light may be excluded. Such a room can also be utilized for photo-

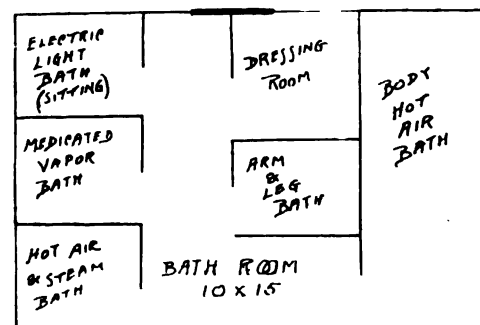


Fig. 8. Treatment room.

graphic work, and possibly for some other purposes.

The drug-room and laboratory (Fig. 6) may be combined in a special room, if you have the space. Where you do your own dispensing, as many of us do in this country, you will want enough narrow shelving to accommodate 100 or 200 small bottles; for you will carry a stock of the alkaloidal preparations, some larger pills, a few chemicals, and such like, all of which can be arranged on shelves 3 or 4 inches wide and built up 6 inches apart. Fluid extracts, syrups, and the bulkier drugs will call for more commodious shelving, and you will have to arrange them to suit your individual requirements. You know what drugs you use and in what forms you use them, so, build accordingly. Your prescription-workbench is best arranged as shown in the sketch, and this may also be used for laboratory-work. Your microscope

may well be kept on your desk in the consultation-room, where it is a silent but potent indication to patients and visitors that you are up to date in your methods. Many patients like to take a peep at some germ- or other slides. Many months ago, I showed "my friend de barkeep" the little bifurcated germs of septic love, and since then he has sent me several hundred dollars' worth of G.-U. work.

The Workshop

The workshop (Fig. 7) calls for a substantial workbench and such tools as are needed in making repairs about the office equipment and in fashioning braces, trusses, and so forth, if you are of an orthopedic bent. It is desirable that you have your own separate toilet-room, as those of many buildings are not fit for ladies and children to use.

Some physicians equip a special room for baths, including hot-air, electric, medicated-vapor, and even tub-baths (Fig. 8). But, when you convert your office into a treatment-institution, then a rest room is almost a necessity, for, many patients need to lie down or keep quiet for half an hour or so after each treatment. To take this rest in the treatment-room delays the treatment of others waiting, while, moreover, people do not feel like lying down in the reception-room, where they become the object of curiosity and too often victims of misplaced sympathy or hysterical gushings.

In addition, there are many little "knick-knacks" of equipment that will come in handy. In the operating-room, a "justrite" waste-pail serves to hold used towels, aprons and other soiled linen. A "want-book" hangs at the corner of the desk, and things to be ordered are noted therein as soon as the need becomes apparent—when stock on hand gets low, and not when it is all gone. Brown "glassine" paper bags are used as receptacles for soiled cotton, swabs, tampons, sponges, and such waste. An enameled douche-can hung on the wall holds the bag which, when filled or at the end of the office-hours, is removed, thrown into the waste-basket, and a clean one put in place, ready for more work. The glassine bags cost a few cents a hundred and the douche-can only a trifle.

The Dressing-Room for Patients

A "dressing-room" for patients (Fig. 9), which takes up no room and interferes with nothing, can be provided in the following manner: About 6 inches above the outer door of your surgery fasten to the door-frame

a semicircle or half-hoop of quarter-inch iron rod, in diameter 6 inches greater than the width of the door; 6 inches of each end of the rod is turned down at a right angle, flattened, and bored with two countersunk

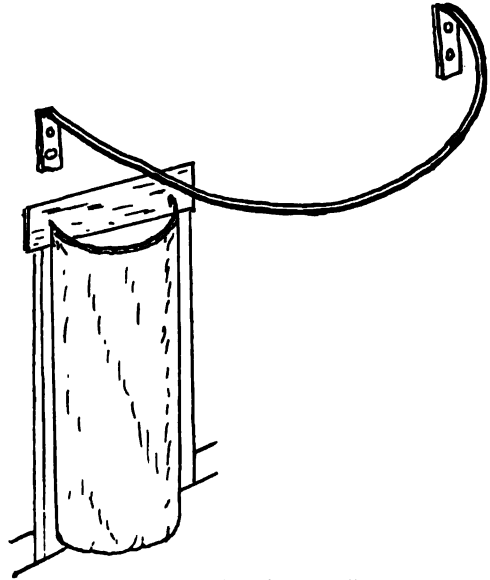


Fig. 9. "Dressing room."

holes for screws. A coat of black shellac is applied. Over one end of the rod are slipped a dozen 1-2-inch brass curtain-rings, and the frame is then screwed into position. On this frame is hung a curtain of light-colored silk or cretonne which just clears the floor. The patient who needs to remove or adjust any part of clothing or underclothing can retire behind the curtain and do so without embarrassment to the doctor. When not in use, the curtain is drawn back against the wall, out of the way.

Office Signs

The best office-sign is one in plain gilt letters on a black-painted small board for an outside swinging one, or on glass for hanging in the window. Use only your surname, as "Doctor Jones," unless there be more than one of your name in the town and distinction becomes necessary. Do not put an expensive gold-letter sign upon a window-glass, as this will be a dead loss if the window gets broken or should you move. White or gold enameled letters may be fastened to the window-glass, as they do not break and can easily be removed. Do not have too many signs: one swinging and one window sign should suffice.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

Medical Director of The Mudlavia Sanitarium

[Continued from August issue, page 652.]

SCIENTIFIC rest cure is often of incalculable value in the treatment of chronic diseases, and the principles underlying it and its application are well described by Dr. Robert Walter in the following quotation:

"The rest cure is based upon a great leading thought: The more work, the less power; the less work, the more power. Rest cure seeks to increase power, making it to be the very opposite of much that passes as medical wisdom."

This practice is based upon another fundamental thought, viz.: Vital power cannot be manufactured; it can only be recuperated. No amount of feeding, digestion or assimilation can take the place of sleep. No tonic, stimulant or medicament can answer to the demands of the vital organs for rest.

"Nature's sweet restorer, balmy sleep" is the cornerstone of scientific rest cure. We naturally inquire what sleep does to make it so important. The answer is, it does nothing; it stops the doing. The tendency of all work is, to exhaust power; the object of sleep is, to stop the work and save the power. Saving the power permits its recuperation, giving more power for future work; using the power means its expenditure, leaving less power for future work. The true object of rest cure is, to recuperate vital power, by refusing to use it today in order that there may be abundance of it tomorrow.

But the question naturally arises, Do all organs require rest? The answer is, All must rest if health is to be maintained and life perpetuated. Perhaps no organ of the body works so continuously as the heart, and, if any organ could work without rest, the heart can. But what are the facts? First, the heart rests between the beats, and, second, every man must spend a portion of his time in the recumbent posture—that is, lying down—to relieve the heart's labor. Men can live for weeks without food and for days without even sleep, but no man can survive many days and maintain an erect position. It is said that the most horrible death that a man can be put to is, to compel him to retain continuously the standing-position. He may

sleep in this position, but such sleep does not rest the heart. While lying down, the labor of the heart is very easy; the blood flows nearly on a level; but when we arise the heart is compelled to pump against gravity, whereby its labors are immeasurably increased. Such labor soon becomes intolerable, for which sleep alone can never atone. If patients who suffer from insomnia will lie quietly in bed, whether they sleep or not, they will be surprised to find how little sleep is actually necessary. It is by getting up and pacing the floor and worrying that they exhaust themselves. Rest of body without sleep is much more valuable than sleep without rest; and it is fortunate that we can usually have the former even if the latter is denied us.

But, if the heart cannot survive without rest, what shall we say for the stomach, liver, lungs, bowels, kidneys, or for the muscles and nerves of the body? Who is it that says that these may be continuously worked, not only, but that their work may be greatly increased by the process of a bastard rest cure—a rest cure based upon the theory that life can be manufactured?

Such a rest cure is in existence and has attracted to itself great attention, being commended by men of great name; and, yet, we do not hesitate to call it a bastard rest cure. It violates every principle of the rest cure. Let human common sense bear testimony to its absurdities.

First. It puts the patient to bed—which is a wise thing.

Second. It excludes from its presence all friends, neighbors, Job-like comforters—which often is an equally wise provision.

Third. It inhibits communication with the outside world and remands you over to the tender mercies of a trained nurse, who shall feed you as a babe, spank you as a naughty child, and often writes upon the door of your chamber, "Who enters here leaves hope behind."

If the intelligent patient can find himself submissive enough to rest under such circumstances, well and good. But, let him not forget that all rest ends here. At this point begins the stuffing and stimulating processes that more than neutralize the benefits of

relief from social taxations. All day long the stomach is plied with food. Liver, lungs, bowels, and kidneys are compelled to keep pace with an ever laboring stomach. And even if the food is predigested and the stomach somewhat relieved these organs must work still harder because of this unwise invention. But, then, nerve and muscle must not be left to any rest. Day by day, even hour by hour, electrical currents must be made to course through these organs, producing nervous excitements and muscular contraction, until their vital forces are wellnigh exhausted. That this is an abortion of rest cure, who that considers can doubt, with one or two organs rested and a half-dozen others forced to the utmost limit of their powers?

The Principles of a True Rest Cure

A scientific rest cure must be a universal one. Every organ of the body should have its rest if health would be recuperated. If it were true that power could be manufactured, by forcing stomach, liver, and kidneys, there might be some excuse for the forcing-process referred to. There would, indeed, be reason for denying the necessity of sleep and of the lying-down posture if power could be produced by any process whatever.

We have demonstrated by unimpeachable fact and argument that vital force can no more be produced than can gravitation or chemical affinity. Vital force is man's inheritance; it comes to him as the days come, an income which he may use but should not squander. He may refuse to use it in dribblets, and so wait and recuperate it until it comes with the torrent's rush; but by no art or device that man knows of can he keep at work the machinery that makes life. It is not made by machinery; vital force is God-made and inherent—not man-made.

Scientific rest cure involves rest of body and mind, of muscle and nerve; in a word, it implies reduced activity of all vital functions. And this end is attained in several ways:

First: By lying down; sleeping, if possible.
Second: By securing freedom, as much as possible, from all social and nervous taxations.

Third: by abstinence from food.

The last-named measure—starving—not only affords rest to the stomach, but also to the liver, lungs, bowels, kidneys, and especially to the heart, which latter's work consists chiefly in circulating the blood or at least in controlling its circulation. The amount of the heart's work depends somewhat upon the amount of the blood present, but

chiefly upon the ability of the blood-purifying organs to make the proper changes in the blood as it passes through them. The fact is, the blood cannot pass through the latter organs without the modification having been effected to some degree.

But, if the blood does not pass through the liver or lungs or kidneys easily, the labor of the heart is greatly increased. And whether it passes through these organs easily depends both upon the heart's vigor and upon the vigor of the organs named. The modifying organs can be invigorated only by resting them; by resting these organs the heart is also rested; but none nor all of them can get a reasonable rest while the stomach is constantly forcing upon them new material to be changed, purified, and circulated. Work of stomach means work of all other organs; rest of stomach means rest of all the organs.

Fasting Versus Feasting and Bloodletting

Sixty years ago men avoided the inevitable consequence by opening a vein and letting the blood run out. By this means, the heart, lungs, liver, and kidneys were all greatly relieved and physicians thought they had a panacea for most diseases. The practice gave relief, but it was a senseless one. Where is the wisdom of working the stomach, liver, and lungs to make blood and then to spill it upon the ground? Why not secure all the benefits that come from bloodletting and avoid all its evils? This can be accomplished by simply giving liver, heart, lungs, kidneys, and bowels a rest, because of first affording rest to the digestive organs.

The inevitable objection offered against this practice will be, that the patient gets weak. Certainly he does, but not any weaker than sleep makes him. A sleeping man becomes weak even to helplessness, and often he lies there until he is burned to death. But who does not know that the sleep makes him weak at night in order that he may become strong the next day?

Let us for a moment inquire what this condition called weakness actually is. Is it not in fact a letting-go of tension, a relaxation of muscle and nerve? And does not strength return through action of muscle and nerve, with corresponding taxation and labor?

It is literally true that when we are weak we are getting strong, whether the weakness be owing to sleep or to rest, to inaction of body and mind or to anything promoting these. It is equally true that we are expending and exhausting our powers by work and activity of any organs or by whatever will promote

their activity, such as stimulants, tonics, excitements, whether these are in the form of alcohol, drugs, baths, electricity or even food. Some of these are conditions for maintaining good health, such as baths for keeping clean, and food for supplying normal wants; but, to administer any of these for the mere purpose of promoting activity or giving strength, under the absurd notion that this is sustaining life and promoting health, is utterly opposed to science and common sense, to all fact and sound reason.

Strength comes with work only because strength, as well as work, tends to exhaustion. Contrariwise, weakness always comes with rest only because of the relinquished power, and by refusing to use it we allow it to accumulate. A horse turned out to pasture with nothing to do is well known to grow so soft and weak as to be worthless for work, but it recuperates and often becomes as a new horse. Take it out of pasture, feed it grain and put it to work slowly, and the animal's strength gradually returns and it is once more a valuable horse.

There is a great law of nature that explains all of these seeming anomalies: The law of effects. The secondary effect of any act, habit, indulgence or agency is the exact opposite of the primary effect. Fasting and not feasting is the proper thing for all who have wasted their substance in ways common to prodigals; perhaps not by riotous living, but by foolishness in many ways.

But, fasting should always be connected with rest in bed. Let it be a means of rest, not of penance. He that will not work shall not eat; conversely, he that will not eat must not work.

It is rest cure that we are advocating, not starvation cure. It is recuperated and not exhausted vitality that we seek; and recuperation involves rest, while exhaustion depends upon work and whatever compels work.

Concerning the principles of scientific rest cure, let us say, therefore:

Preservation of Strength Is Fundamental

The power that made, preserves, and operates the living organism is the only power that can heal or cure it. No intelligent physician doubts this to be true; he only affirms that we must assist nature, and his plan of assisting nature is always the plan of exciting and stimulating the vital organs, as with calomel for the liver, with purgatives for the bowels, with strychnine for the muscles, and so on—which is really the plan of preventing rest and promoting exhaustion.

If, then, it be true that only vital power heals, it follows legitimately that the rapidity and certainty of cure depends upon the amount of vitality possessed. And this is in accordance with all medical theories. It is everywhere agreed that the diseases of our day are due chiefly to overtaxation from work or excitements of social and political life.

To sustain the patient, is the leading idea of medical practice. But how is he generally sustained? By exciting, stimulating, and preventing rest. Physicians do not seem to know that the heart, liver, stomach, bowels need rest as well as do the nerves and brain. The error, no doubt, is due to the theory that the feeling of strength is coincident with its possession, when in reality the feeling of vigor coincides with its expenditure. Men feel strong while they are working and weak when they are sleeping. Men have not studied this great truth, and, hence, a great error is committed everywhere.

It follows that rest cure means rest of all the organs, not some of them. The failure to recognize this truth is the explanation of the increasing weakness observable among the people.

Recuperation of the Patient Must Be Physician's Aim

If, therefore, it is vitality that alone cures, and if the rapidity and certainty of cure depend upon the amount of vitality—as medical practitioners all agree in the very act of trying to sustain the vital power, as well as in the general sentiment that ill health and disease are due to the overtaxations of the people—it follows that recuperation of this power is the leading thought of all successful medical treatment. If there is in the sick power enough in a given case, all obstructions will be overcome and the patient will be restored to good health; if he dies or becomes a chronic invalid, it is because of exhaustion of power. The *sine qua non* of all successful treatment is, the recuperation of power. If this can be secured, a case will not prove fatal.

The fatalities so common, especially when important lives are at stake (as those of presidents or ex-presidents), are due to the error of supposing that we can manufacture vitality out of food and sustain it by means of stimulants. Either theory is utterly false. Rest and sleep are the only means of recuperation; feeding and stimulating are the means of compelling vital activity and expenditure.

We trust that the time may soon come when some physiological phenomena will be suit-

ably elucidated and understood, that are now as delusive as are some physical ones. The sun does not revolve around the earth; neither do stimulants and tonics, or even food, give to the invalid what they are believed to give.

They actually take away what they seem to give, but deceive both patient and doctor by making the power that is expended and depleted apparent in the process of expenditure. [To be continued.]

Infantile Paralysis

With Some Suggestions for Its Treatment

By M. W. THEWLIS, M. D., Wakefield, Rhode Island

SEVEN of the following eight cases of acute anterior poliomyelitis occurred in the epidemic of 1913 and were all within a radius of eight miles, although each case was in an adjoining town. In every instance, except one, there was no possibility of one case coming in contact with another. These patients are all living at present, except one, who was accidentally drowned, and in all cases but one the patients made an excellent recovery without experiencing any contractures. The epidemic of 1913, however, undoubtedly was less fatal than is the present plague of 1916. There is no question but that the mortality rate varies in different epidemics.

Report of Cases

Case 1. Miss C., aged 18, consulted me on September 15, 1913, for occipital headache. The next day she was ill in bed and for a week she had what looked like an attack of gastroenteritis. She complained of backache, numbness of the hands, and incontinence of urine, which condition was of three days' duration. On the seventh day, there set in a flaccid paralysis of both legs and she also was unable to move the left arm; but at the end of three weeks, this arm gradually regained its powers, so that she could raise it to her head. The legs remained paralyzed for two months, after which time she could be helped into a chair. Electric treatments with the high-frequency current, by means of a surface-electrode, were begun at the end of the second month: also massage treatments. Improvement gradually took place, and in a few weeks she was able to walk about with the aid of crutches.

Case 2. E. S., boy aged 13. When called, September, 1913, he had been sick three days with what the mother called biliousness, and she requested me to prescribe for an attack of "rheumatism" which she thought the boy had. An examination revealed a typical case of infantile paralysis involving

the whole right arm. The boy at no time had been sick in bed. Massage was not begun until December, and in the following February the high-frequency current was applied and continued three times a week for four months. He improved to the extent that he could use his arm playing baseball, and was able to do quite a good deal of work.

Case 3. M. G., girl aged 5, had been playing with the boy described in case 2. On October 10, 1913, she was taken ill with vomiting and diarrhea, and on the second day of her illness she suddenly became unable to move her legs. On the 6th day, she had so improved that she could run about the house as usual. This undoubtedly represents an abortive case of infantile paralysis.

Case 4. T. A., boy aged 2, was taken ill with gastroenteritis on October 14, 1913. On the 6th day, the mother noticed that the boy could not move his legs. The high-frequency current was not applied until May, 1914, because there was a marked coldness of the legs for several weeks, which made the parts extremely sensitive, consequently preventing the use of electricity. After one month, the child could move the legs, and he steadily improved, but had a tendency to club foot, so that a light, well-constructed brace was fitted. The effect was excellent. The boy, today, experiences but little difficulty in playing the usual games with other children.

Case 5. M. S., aged 4, on October 18, 1913, fell from a chair and the mother thought that the fall produced the paralysis which the child had in the legs. It was unquestionably a case of infantile paralysis, and in the course of a month the high-frequency current was applied twice a week, one minute at a time. This caused a marked improvement in the condition, and, in February, 1914, the child could walk into my office without assistance.

Case 6. H. P., aged 2, was taken ill, in October, 1913, with fever, which lasted four days. Paralysis of the lower extremity re-

sulted. At the end of a month, the high-frequency current was applied. Recovery was complete.

Case 7. C. K., boy aged 4, was taken ill on September 9, 1913, with all symptoms of gastroenteritis. At the end of one week, the child was paralyzed in nearly every muscle. The arms were flaccid, as were both legs. The child could not move in any direction. The intercostal muscles were paralyzed, and at times there was a partial suffocation and paroxysmal dyspnea, which undoubtedly was due to involvement of the bulbar nuclei. There was also a paralysis of the bladder-muscle as well as of the bowels, this continuing for one month. Involvement of the sphincters for this length of time is unusual in infantile paralysis, although occasionally it may be present for a few days. The left side of the boy's chest was more paralyzed than the right side, which produced a lateral curvature of the spine. On October 8, the surface-electrode of the high-frequency current was applied for a minute's treatment, and continued three times each week. On November 6, a plaster-jacket was applied to the spine, later a well-fitting spinal-brace being substituted for the jacket. In January, braces were fitted to the extremities. The upper extremity regained its use, but it was only at the end of two years that the child could take a few steps alone. In June, 1916, he had bronchopneumonia, from which he recovered. He can now take a few steps with the aid of braces. In this case, there are no contractures and I attribute this to the faithful application of Dr. E. G. Abbott's method of overcorrection.

Case 8. P. D., girl aged 3, was taken ill on September 8, 1915, with paralysis of the right leg. On October 8, the high-frequency current was applied and in two months the child apparently was cured.

Comment

An analysis of the symptoms in the foregoing cases shows that the onset is usually insidious, with fever and malaise for two to five days before the paralysis appears. There is sometimes occipital headache, pain on the spinous processes, and general hyperesthesia. Usually there is no pain in the extremities. Gastroenteritis, with fetid diarrhea, is present in many instances, and incontinence of urine and of feces may last for three or four days. It is unusual, as in case 5, to see a paralysis of the bladder and the bowels last for a whole month. The atrophy was quite marked in all instances, but was greatly improved by

the application of the high-frequency current. The muscles involved in most instances of the residual paralysis were the extensor longus digitorum, the peronei, and tibialis anticus.

In making a diagnosis, one should not forget that infantile pseudoparalysis of syphilitic origin may be present. I once had under care a 2-year-old child whose parents I knew to be syphilitic. The child was seized with every symptom of infantile palsy, with loss of power, but, strange to say, painful and swollen joints. I promptly administered mercury, in the form of a gray powder, which brought quick improvement. I might add, parenthetically, that young children can be given this preparation in large doses without its causing bad results.

Treatment

Prompt isolation was not required in the epidemic of 1913, yet, none of the cases occurring could in any way be traced to those here described. The noses and throats of the patients and also those of the other members of the respective families were treated daily with an antiseptic spray composed of the aromatic oils. Their bowels were flushed with a saline. A liquid diet was ordered. Bromides were given in some instances, for inducing sleep. Baths of warm salt-water were given twice daily, but no massage was allowed for one month or longer; that is, not until the acute stage had completely subsided. As soon as this stage had ended, I prescribed a course of iron—3 grains of the phosphate three times a day.

At the end of the acute stage, which may be in from one to four months, I began the application of the high-frequency current, with a surface-electrode, from a Campbell coil. In some cases, this treatment cannot be begun before four months from the onset of the attack. The degree of hyperesthesia will usually give the indication for the use of electricity, for, occasionally the degree of sensitiveness is so great that it is necessary to use the weakest possible current that can be given with the electrode. At the first treatment in the case of a child, I do not, as a rule, pass any current through the electrode, in order not to frighten the child, thus gaining its confidence.

Often it is several weeks before massage can be instituted, owing to the tenderness of the skin. The patient described in case 4 still comes to my office for these electric treatments, three years after the attack, and even now there are days when the legs are so sensitive that I cannot give the treatment.

On some days, there is a marked coldness of the limbs and then they are of a purplish color. This discoloration of the skin contraindicates the use of electricity.

Overstimulation either by means of the current or by massage will quickly tire out an already fatigued muscle and will defeat the purpose of the treatment, so that, if the electricity in its mildest application causes any pain to the child, it is better to wait a few weeks, until the hyperesthesia has entirely disappeared, before resuming the treatment. The purpose of the massage and electricity is merely to keep the muscles alive until the nerves are able to afford them proper nourishment; but, if overstimulation is practiced, the results will be disastrous. Three years after the attack, in some cases, I apply the current for only a minute at a time, repeated twice a week. It should not be continued longer than a minute at a time, during several weeks, while in those cases which are more tolerant I seldom use the electrode longer than three minutes. The gentle stimulation assists nature in keeping the muscles alive until the nerves regain their life. The electrode sometimes is applied to the spine for thirty seconds.

The high-frequency current is particularly adapted to these cases, because there is passed quite a good deal of electricity, while causing very little sensation of discomfort; this being due to the low amperage. A course of electricity is the most harmful procedure that can be employed in infantile paralysis if not done properly; if however, 1-minute treatments are given, and a very mild current is used, the results are very satisfactory.

As a rule I avoid the muscles that are likely to be involved in a contracture, because the muscles merely are stimulated to contract and thus the purpose of the treatment is defeated. For example, it is well not to treat the Achilles tendon, because that is liable to be stimulated to contraction. On the other hand, if the electrode is applied to the anterior part of the ankle and foot, it will stimulate

the muscles that antagonize this, the most frequent, chronic contraction.

Method of Preventing Contractures

Dr. E. G. Abbott, of Portland, Maine, for a long time has been applying his theory about the overcorrection of deformities to the treatment of lateral curvature of the spine. He believes that in order to correct a deformity it is necessary to overcorrect it in the opposite direction, so that the deformity will be transferred to the opposite side. This principle yields remarkable results in his hands. I have rigidly applied Doctor Abbott's principle in these cases of infantile paralysis and, as a result, have not yet seen a single contracture to follow.

At the end of the second or third week, I have the nurse begin passive movements of the affected parts. In the case of the arm and fingers, these are moved with force, if necessary, in all directions. The basic principle is, that it is not sufficient to correct a deformity; it must be made to equal the deformity in the opposite direction, in order to bring it back to a normal position.

In the legs, the most frequent location of a contracture is found in the Achilles tendon. In this case, the foot should be extended so as to stretch the tendon as far as possible. In two of my cases, I experienced trouble in flexion of the first toe. It required prompt stretching in order to prevent a contracture, as this would prove very inconvenient later in life. Sometimes this tendency to a contraction of the fingers or toes will develop overnight, so that it is always advisable to watch these small joints constantly.

It requires the services of a trained nurse to follow instructions as to stretching the muscles, for, usually, mothers will not carry the procedure to the proper point, since it hurts the child. It requires painful stretching at times, and the nurse should be instructed not to stop short of hurting the child, but to make sure to produce the required result, even if it causes pain.

THE discoveries which have transformed the face of modern medicine have been in the field of infectious diseases, and in no other department of medicine could new knowledge have meant so much to mankind, for the infectious diseases have a significance to the race possessed by no other class of disease, and problems relating to their restraint are scarcely less social and economic than medical.—*Welch*.

What Others are Doing

SODIUM SALICYLATE IN SCARLET-FEVER

In a meeting of the Medical Society of the Paris Hospitals (*Paris Med.*, July 1), Drs. F. Ramond and G. Schultz recommended giving sodium salicylate to all patients having scarlet-fever. The drug is to be given from the beginning of the illness and continued until the fever and general symptoms have disappeared.

All right—but saturate the patient with calcium sulphide, and watch the urinary secretion.

THE THERAPEUTICS OF WATER ADMINISTERED SUBCUTANEOUSLY

The *Medical Times* (London) for July 1, abstracts a paper presented to *The Dublin Journal of Medical Science* by G. Arbour Stephens, who has obtained some very interesting results from subcutaneous injections of distilled water into carcinomas. The suppurating cases that were overwhelming in their offensiveness, after three injections of 10 mils (10 Cc.) of water, lost all their horrid smell, although the progress of the disease was not arrested.

In studying these observations, the author concluded that in every disease where chronic or subchronic inflammation occurs, when not permanent, subcutaneous injections of distilled water should prove curative.

The treatment is not specific, but naturalistic, in that it only helps nature to bring about recovery; and it does this by so altering the surface tension of the corpuscles as to allow of a more rapid osmosis of the "antibodies," whereby they are mobilized the more readily for the battle against the toxins, while diapedesis is stimulated. Being naturalistic, it follows that distilled water, injected subcutaneously, where it comes into rapid contact with the leukocytes, ought to be of value in all sub-acute or chronic inflammations.

In accordance with this line of reasoning, the author employed injections of distilled water and found them of value in syphilis, rheumatism, gonorrheal rheumatism, inflamed glands, and diseased appendix; but

it is quite possible to extend the list by applying the treatment to other suitable cases of subacute or chronic inflammation.

PITUITRIN IN LABOR

In a paper on the merits of pituitrin in labor, Collin Foulkrod (*Ther. Gaz.*, May, 1916) points out that obstetricians by no means are unanimous in their verdict, some authors being very enthusiastic in their conclusions, while others counsel care. Against the practically general opinion that pituitrin should not be used in the first stage of labor, the author cites S. W. Bandler, who asserts that in this stage, under proper conditions, the remedy is of the greatest aid in furthering the progress of labor.

Foulkrod, however, holds that caution should be exercised when employing pituitrin, until thorough acquaintance with the possible dangers in each patient shall assure safety; this not only because the pituitary preparations vary in strength, but also because individual patients do not react to it in the same way.

Pituitary extract should not be administered by the nurse in the absence of the physician, who must not leave the patient after the latter has received a dose of it.

Foulkrod is emphatic in his assertion that the ampules at present offered hold too much of the active substance to be handled by the general practitioner, and that a whole ampuleful should never be administered by him as a standard dose.

The author is extremely guarded in expressing an opinion concerning the value of pituitrin as an oxytocic, but he believes that it should be supported by some parturifacient of slower and more protracted action—ergot, for example. Still, he is very positive in declaring that pituitrin should not be resorted to unless the presenting part is definitely engaged in the pelvis and the largest diameter has passed through the plane of the inlet—and then only if the outlet has been measured carefully for any contraction of its transverse diameter.

In conclusion, it is stated, that there is a possibility of shock, on the part of the

mother, and also a possibility of danger to the child, particularly if the uterine contractions excited by pituitrin are sufficiently severe to cut off the normal circulation of the fetus, through some interference at the placental site.

ORGANIC EXTRACTS OTHER THAN PITUITRIN AS ECBOLOGICS

A highly interesting announcement has been made by Robert Haehler, of Vienna, in the *Zentralblatt fuer Gynaekologie* (1915, No. 51), provided his statement is verified by other observers.

Basing upon the results in 30 cases, as obtained in the Halbau Klinik, the author declares that the extracts of at least a considerable proportion of the different animal organs exert the same tonic influence upon the musculature of the gravid womb as does pituitrin; and he enumerates, thus far, the extracts of the thyroid, thymus, and bronchial glands, the spleen, ovary, corpus luteum, placenta, testicle, and mucosa of the small intestine.

Injected in the place of pituitrin, in retarded labor-pains, all of these organic extracts were found to be virtually equivalent to the former, in the power of inducing, strengthening or accelerating the expulsive uterine contractions in childbirth. This certainly would prove a valuable discovery, in view of the costliness of pituitary extract and the difficulty of its preparation.

NOTES ON THE USE OF PITUITRIN

In *The Virginia Medical Semi-Monthly* for February 25, Dr. M. P. Jones reports his experience with pituitrin, which he has used in delivering 4 primiparas and 10 multiparas. In 2 of the former, the result was good, the labor-pains being stimulated almost immediately and delivery taking place thirty-five to forty-five minutes after the pituitrin was injected. In the other 2 primiparas, the drug did not act as well, instrumental delivery becoming necessary.

In the 10 multiparas, on the other hand, labor in each instance terminated in less than twenty minutes. The labor-pains came on almost immediately and kept up as long as there was need of contraction. In each one of these women, there had been marked uterine inertia, with no prospect of an early termination of the labor, and the author regards the effect of the pituitrin as most remarkable. Although chloroform was given

in a few instances, the author says that, strange as it may appear, the woman seems to be so taken up with the changed condition of affairs and the progress of the labor that she rarely says much or complains of the pains being unbearable.

In none of the 14 cases in question did laceration of the perineum or postpartum hemorrhage occur; in one case, however, extreme difficulty was experienced in delivering the placenta—owing, the author thinks, to the pituitrin. In one case of hemorrhage, this drug acted more promptly and satisfactorily than ergot.

Doctor Jones emphasizes that entirely satisfactory results are not to be expected from the pituitrin until dilatation of the os is well under way. It also is important to make sure that the position of the child is such as not to interfere with the delivery. While the field of usefulness of this drug in obstetrical work is somewhat restricted, it nevertheless is a most important one, and when indicated, the author is convinced, there is nothing else to equal it.

THE SYNERGISM OF MORPHINE AND SCOPOLAMINE

In view of the interest recently shown in "twilight sleep," some studies of the synergism of these drugs made by McGuigan, Ross, Smith, and Barbour—as published in the November, 1915, number of *The Journal of Pharmacology and Experimental Therapeutics*, are worthy of consideration. Details of these experiments we cannot give in these pages, for lack of space. It is interesting to note, however, that Smith has found morphine and scopolamine synergistic, both as regards action upon the heart and the respiration; in other words, the addition of scopolamine to morphine increases the slight toxic power of the former, as regards heart action, and the more decided toxic action upon respiration.

It is particularly interesting to learn that, according to Smith, scopolamine is the more dangerous of the two drugs. This conclusion is at variance with the commonly accepted opinion, that the real danger of the combination consists in the overdosage of morphine. This being the case, the Gauss practice of giving repeated doses of scopolamine to a single dose of morphine would not seem to be warranted.

According to Barbour, neither of these narcotics inhibits the activity of the uterus. Therefore, if they delay the progress of labor,

they must do so entirely as a result of their cerebral action. This accords with the testimony of those using the hyoscine-morphine combination largely, that there is no appreciable delay in delivery as a result of the use of these drugs.

The clinical testimony as to the value of this narcotic combination, *on the part of those who have used it extensively*, is still overwhelmingly favorable. The work of these experimenters, however, serves to emphasize the warning so frequently given in these pages, to avoid over-dosage. When hyoscine and morphine are used carefully, supplemented by a volatile anesthetic if prolonged or profound anesthesia is required, only the happiest results are to be anticipated.

TRANSPLANTATION OF FREE JOINT

Proofs of the practicability of transplanting free joints are multiplying, among these being such an operation performed by Doctor Oehlecker, of the military hospital at Hamburg (*Muench. Med. Woch.*, Jan. 4, p. 17); and, as reported to the local medical society, it is immaterial whether the organ is homo- or hetero-plastic. In the present instance, the proximal joint of the index-finger had become stiff following a bullet-shot. In its place, the author planted the distal joint of the corresponding forefinger of another man mutilated in combat. Healing proceeded perfectly, and functioning as well as radiographic control are stated to be "faultless."

ALCOHOL AND EPILEPSY

It is a well-established fact that parental alcoholism is an important etiological factor in the development of epilepsy in the children; in fact, many authors attribute to alcoholism even greater importance than to parental epilepsy. The percentages named vary, ranging, from about 15 percent of alcoholic heredity in epileptics observed by American physicians, to a little over 20 percent observed by German authors, and 50, even 60 percent of alcoholic heredity claimed by French writers on epilepsy.

While there is nothing surprising in the fact that parents afflicted with chronic alcoholism transmit to their offspring a vulnerability and instability of the nervous system, which frequently is manifested in the form of epilepsy, the assertion has been made that children conceived during a definite period of alcoholic intoxication, in parents otherwise not alcoholic, may suffer from the same curse;

an assertion that naturally is very difficult of verification. It, therefore, is of interest to refer to seven observations mentioned by Dr. Matthew Woods, of Philadelphia (*Jour. Amer. Med. Assn.*, 1913, vol. lxi, p. 2291), of epileptic children one or both of whose parents had been under the influence of alcohol at the time of conception. The dates of the latter could be definitely determined in every instance, because the children were born either after the death of their fathers or during the latter's absence, conceptions having occurred on known dates and after which no further cohabitation took place. In all cases referred to, the parents were abstemious or total abstainers and they had indulged only on the isolated special occasions.

ATROPINE IN INFANTILE CONVULSIONS

In acute attacks of convulsions in children, but few rapidly effective measures at present, unfortunately, are at our command, and especially is this true for rural practice, F. Rascher, of Fischen in Allgaeu (Bavaria) writes in the *Muenchener Medizinische Wochenschrift* for January 4 last, in introducing an account of his favorable experience with atropine in one instance of this nature. Since library facilities were not accessible at the time, he confesses inability to discover just what has been done in this direction, and for that reason hopes that his contribution may give impetus to an extended trial of this therapy by others. We follow the salient features of the detailed report.

Doctor Rascher received a midnight call to attend a 3-year-old girl that had the "fits" bad. It so happened that he remembered an article contributed, by a Doctor Boesl, to the *Wochenschrift* (above named) in 1907, in which methylatropine hydrobromide had been recommended for infantile eclampsia. So, in default of that synthetic alkaloid, the author took along an ampule of atropine sulphate.

The prodromal symptoms in the otherwise robust child had set in at about 6 o'clock that evening, to be followed by a sudden intense eclamptic seizure, which reoccurred at short intervals in increasing and threatening severity. Because of the child's hot skin, a cool enema had been administered by the mother; then the Doctor was sent for. The anamnesis excluded, as the cause, worms, spoiled foods, and heredity.

The author encountered the patient in one of its attacks, with the extremities in clonic

convulsions of the highest degree, intense laryngospasm, and face livid. The pulse beat 140, the temperature registered 40.7° C. This attack lasted a few minutes; but, while the viscera were being hurriedly palpated, another seizure set in, so formidable that it was expected to terminate in death.

Boiled and cooled water already being held in readiness (ordered upon entering the residence!), the contents of the atropine-ampule (Gm. 0.001—1-64 grain) were diluted so that a syringeful represented 0.001 Grams (1-640 gr.) of atropine sulphate. This dose was administered hypodermically, without delay.

The result was astonishing. The laryngeal spasm ceased in about thirty seconds and the clonic convulsions let up after a very few minutes. Then the child involuntarily voided its urine, part of which was caught in a vessel. During the half-hour next following, the child's arms continued to exhibit a series of light convulsive attacks, but between times the girl slept soundly and quietly. Three-quarters of an hour after the injection of the single dose of 1-10,000 of a Gram of atropine, the patient's temperature had receded to 38.5° C. (rectally), and when now she was put into a cool pack she scarcely roused, and instantly dropped off to sleep again.

The following forenoon the child was found playing in bed and was demanding something to eat. No further attacks had occurred (nor did afterward), while the temperature (rectal) registered 36.7° C.

The specimen of the patient's urine, mentioned above, contained a considerable amount of albumin; not, though, either blood, sugar or granular casts, or any epithelial cylindroids. Two days after the episode, the urine proved to be normal.

Subsequent inquiries did not elicit any possible etiologic factors for this attack, unless it be the exclusive use of boiled milk as the child's nourishment, and which might suggest vitamin-deprivation.

The Doctor Boesl referred to also had but one such case. Rascher expresses a preference for the methylatropine, as being considered relatively considerably less toxic than the natural alkaloid, and, hence, more adapted for use in children.

INFANTILE PARALYSIS: A REVIEW OF RECENT LITERATURE

The prevailing epidemic of infantile paralysis continues to occupy much space in the medical journals, and, as a matter of course, various modes of treatment are being sug-

gested. Under the circumstances, an account of those therapeutic measures that appear to be best adapted, considering the nature and characteristics of the disease, seems advisable, and we shall preface this account by reviewing briefly what is known of its etiology and epidemiology.

It is unfortunate that the public has been impressed with the idea that the problems involved in the causation, development, course, and treatment of infantile paralysis are fully known; it would have been much better to acknowledge frankly our relative ignorance as to this disease, which, indeed, has been studied seriously for less than ten years. The medical profession should have admitted that there are numerous phases of the problem regarding which our information is very meagre and indefinite.

European writers display a predilection for the term of acute poliomyelitis, and F. E. Batten, declares in the London *Lancet* for April 15, that this term has now come into such general use that it is inadvisable to attempt to replace it. On the other hand, R. W. Lovett, of Boston, whose recent book on the treatment of infantile paralysis is reviewed in this number of CLINICAL MEDICINE, holds that the designation is an incorrect one, and arrives at the conclusion that infantile paralysis would seem to be the most available name for general use, even though it does not describe the condition correctly when it occurs in persons past childhood. The term preferred by Lovett is the one employed also by Doctor Flexner and other writers connected with the Rockefeller Institute, and, hence, will be adhered to in this article.

Reviewing briefly what is known concerning the nature and the manner of conveyance of the disease, the following may be said, abstracting a recent article of Doctor Flexner's, which has been reprinted in various publications.

The Epidemiology of Infantile Paralysis.—The virus of infantile paralysis is found in the central nervous organs and upon the mucous membranes of nose, throat, and intestines of persons suffering from the disease; it is found less frequently in the internal organs; it has not been detected in the general circulation of patients.

The virus is known to be discharged from the infected human body in the secretions of the nose, throat, and intestines. It is not known whether there are other ways of its elimination. The intermediary agency of insects in the distribution of the virus probably is of importance only in so far as flies or

mosquitoes may carry it from infected discharges to articles of food or as the insects may contaminate the dust which is inhaled.

Experiments conducted to determine whether blood-sucking insects may act as carriers of the infection have not given any definite results. (This probably is owing to the fact that infantile paralysis does not seem to be a bacteremia, the virus not being found in the circulating blood.) It must be taken into consideration that healthy persons or persons having but light (abortive) forms of the disease may carry and disseminate the virus.

It is probable that some domestic animals, notably poultry, pigs, dogs, and cats, have justly been suspected as possible carriers of the infection. Sheep, cattle, and even horses also have come under suspicion, although nothing definite is known in this respect.

As a rule, the virus enters the body by way of the mucous membrane of the nose and throat. It multiplies and then penetrates the brain and spinal cord by way of the lymphatic channels which connect the upper nasal membrane with the interior of the skull.

After it has been discharged from the body with the secretions and excretions, the virus may resist even the highest summer temperature, complete drying, and the action of weak chemicals such as glycerin and carbolic acid. The survival of the virus in the secretions is favored by the absence, more or less complete, of light, while bright daylight is unfavorable and direct sunlight destroys it in a short time.

The virus of infantile paralysis is destroyed more quickly and completely in the interior of the body than in the mucous membrane of the nose, throat, and the intestines.

In the spreading of an epidemic, the routes taken are those of ordinary travel, both by water or land, along the highways and railroads; in short, wherever infected persons remove themselves to they may carry the infection.

The susceptibility to the infection varies with the individuals; in general, children are more liable to be attacked than are older people; still, adolescents and adults to some extent fall victims.

The period of incubation, that is, until the manifestation of the first symptoms, has been observed to be as short as two days; at other times, it has been two weeks or even longer. Ordinarily it does not exceed eight days.

The danger of communication from patients, that is to say, their infectivity, probably is greatest during the very early and acute stages of the attack.

Infantile paralysis belongs to those diseases in which recovery from one attack confers immunity against another infection. Immune substances have been found in the blood-serum of such persons twenty years after their recovery.

The seriousness of the disease and of its consequences, and also the uncertainty attaching to our information concerning its actual nature and origin, has called forth the best efforts of clinicians and investigators alike. The New York Commissioner of Health recently extended an invitation to a number of well-known American pathologists and bacteriologists to meet in a conference, and by them a program was outlined for the study of all the connected unsettled questions. The researches which are being initiated in accordance with this program very naturally will require time, but we are confident that the cooperation among so many excellent workers will be productive of practical results.

The Treatment of Infantile Paralysis.—We have already mentioned Doctor Lovett's book on the treatment of infantile paralysis. The same author has given a very brief outline of the subject, which was published in *The Weekly Bulletin* of the Department of Health of the City of New York for August 19, and also in *The Monthly Bulletin* of New York State Department of Health for August. Copies of these bulletins can, undoubtedly, be obtained by requesting them.

The acute stage of the attack manifests itself by tenderness of the muscles, and it should be pointed out that the patient must be let alone while this exists, because massage and other manipulations, including electricity, at this time may delay recovery seriously. The patient must be kept absolutely quiet, and the administration of strychnine and ergot is not then advisable. Deformities may be prevented by keeping the feet at right angles to the legs, in order to avoid "drop foot." The knees should be kept extended. Lateral curvature of the spine must be counteracted by suitable posture.

When the muscular tenderness has diminished, it is desirable to place the patient in a warm salt-water bath, into which he may be lowered on a sheet once a day, and in which he may be able to move his limbs without pain. This is not desirable during the first days of the disease however. The treatment at this stage may be summarized as consisting in rest and in the prevention of deformities.

With the disappearance of the tenderness and of the acute process in the spinal cord,

therapeutic measures may be begun; but these should not be instituted in less than four or six weeks after the onset.

Doctor Lovett discourages permitting the patient to retain the recumbent posture for an indefinitely prolonged time. He encourages the upright position, as antagonizing the evils of the permanent sitting-posture and because the effort to balance on the feet stimulates a large number of muscles not otherwise to be reached. This is a valuable form of muscle-training.

It may be necessary to aid the patient in standing and walking by means of leg-braces. Crutches may or may not be required. If abdominal weakness is present or scoliosis exists, abdominal or spinal corsets should be worn. It is important to avoid fatigue. The muscles must be trained gently and slowly and must not be overstimulated. Four therapeutic measures should be considered during the second stage; namely: massage, electricity, heat, and muscle-training.

The chronic stage begins about two years from the onset and, as a rule, demands the services of a surgeon.

Drugs That May of Use.—Although it has been asserted that drug-treatment is not to be depended upon in infantile paralysis, Doctor Flexner makes mention of hexamethylenamine; this being the only antiseptic known that is carried into the central nervous system and which may be found in the spinal fluid. In early-stage cases, it has been found to be of benefit.

On general principles, CLINICAL MEDICINE before now has suggested timely and free resort to calcium sulphide, which has proved a remarkably efficient internal antiseptic in the hands of numerous practitioners. This suggestion we find supported by several correspondents to *The Medical World*. In the September number of that journal, Dr. O. E. W. Swan reports on her favorable experience with this drug in three cases. In two of the children, respectively 2 and 7 years of age, the disease was fully developed, and they recovered promptly and without being paralyzed. In the third one, the attack was arrested in its incipient stage.

In addition to these antiseptic drugs, adrenalin has been employed, first by Doctor Meltzer of the Rockefeller Institute, with very satisfactory results following its intraspinal injection. In a personal communication to Doctor Boyd (*Jour. Iowa State Med. Soc.*, Aug., 1916), Doctor Meltzer states that adrenalin positively does no harm in these

cases, while, judging by an extensive experience in one hospital, it undoubtedly had a good effect; it caused all the paralytic symptoms to disappear.

Good results from the intraspinal injection of adrenalin-solution, in the strength of 1 : 1000, are reported also by Dr. Sydney V. Haas in *The Medical Record* for September 2. In 3 boys—6 years, 4 1-2 years, and 2 1-2 years of age, respectively—the existing paralysis was recovered from to a considerable degree. (Before injecting the adrenalin-solution, Doctor Haas removed between 60 and 70 mils (Cc.) of the spinal fluid.)

In contrast with the results in these cases, the author refers to 5 others in which no intraspinal injections of this drug were given. Two of the patients died of respiratory paralysis, and one had a spastic paraplegia of both lower extremities after six weeks; but one has recovered completely.

Doctor Haas concludes that, in the light of present knowledge and experience, the ideal treatment consists in: (1) early lumbar puncture and withdrawal of spinal fluid; (2) administration of adrenalin intraspinally; (3) the immediate introduction of immune-serum or, in its absence, of normal serum.

The Serum-Treatment.—It has been demonstrated experimentally that the serum of patients who have recovered from an attack of infantile paralysis possesses the power to destroy the virus in the test tube, but that this immune-serum is incapable of preventing the development of the disease when it is injected simultaneously with the virus or after its injection.

Intraspinal injections of an immune-serum are effective in the preparalytic stage, in delaying and preventing infection in monkeys. It has been employed with success in cases of the ascending type.

Serum obtained by venipuncture from persons who have recovered from the disease is injected into the spinal canal after a corresponding amount of the intraspinal fluid has been abstracted, usually about 10 mils (Cc.). While the technic of the treatment is easy, there is decided difficulty in finding a person having recovered from infantile paralysis and who has already been successfully subjected to the Wassermann test, and who moreover, is willing to donate the necessary blood.

It is useless to carry out the treatment when the disease already has become quiescent, the more suitable cases being those that (1) present symptoms of an ascending or progressive disease; (2) that present meningeal

symptoms; (3) that are in the preparalytic stage (provided the diagnosis can be made).

The experiences with the injection of immune-serum for purposes of treatment have been misinterpreted, it having been stated erroneously that spinal fluid obtained by lumbar puncture from a patient ill with infantile paralysis might be used to advantage by subcutaneous or intramuscular injection in the same patient. This method would constitute an autogenous therapy, as it was introduced first for the treatment of pleurisy with effusion, by the French physician, Gilbert.

Doctor Meltzer (*N. Y. Med. Jour.*, Sept. 2) deprecates this procedure, claiming that it is dangerous and inadvisable to inject into the organism a fluid containing the living virus. On the other hand, he encourages the treatment of patients by means of the serum from persons who have recovered from the disease, in which living organisms no longer are present. (In regard to this, see also Flexner, *Jour. A. M. A.*, Aug. 19, p. 583.)

Speaking of this method of passive immunization, an editorial in *The Medical Council* for September suggests a modification, in so far as the supply of such immune-serum (the amount of which naturally is limited and insufficient for the treatment of all existing cases), should be used to sensitize autogenous bacterins prepared by the method proposed by Wohl (*Amer. Jour. Med. Sciences*, Aug., 1916), and the sensitized autogenous bacterin should then be injected into the theca vertebralis, in accordance with the technic advocated by Batten, in his article in *The Lancet*.

The Prevention of Infantile Paralysis.—In view of the insidious distribution and onset of infantile paralysis, on account of its non-characteristic mode of attack and of its destructive effects on the central nervous system, some authors think it unlikely that any effectual remedy other than prevention will be found for this disease. Since the virus is known to exist in the nasal and buccal mucous membrane, it is essential to pay careful attention to the discharges therefrom, both in order to counteract the further extension of the disease in a given case and to prevent its dissemination. For this purpose, Doctor W. S. Whittemore, of Boston (*Boston Med. and Surg. Jour.*, 1916, Aug. 17) urges the use of kaolin powder, as a prophylactic measure, in the case of every child or adult who has come in contact with any possible source of infection with infantile paralysis. He refers to a report published by Hektoen

and Rappaport, in *The Journal of the American Medical Association* (1915. vol. 64, p. 1985), on the successful use of insufflations of kaolin powder into the nose for the purpose of removing bacteria from the nasal mucus. Doctor Whittemore employed this method first on himself and in members of his family, then in his private practice, in the treatment of coryza and tonsillitis, with the result that apparently it cured these infections promptly; while, besides, it was not irritating; but, on the contrary, distinctly soothing. He believes that *kaolin insufflations* would prove useful in *preventing the localization of infection with the virus of infantile paralysis*.

In view of the fact that infantile paralysis is an acute specific fever, with an incubation-period of four to twelve days, it goes without saying that the patients should be isolated. Nevertheless, it appears that the danger of communication from person to person, or the infectivity of a given case, is not very great, providing the discharges are disinfected properly. Furthermore, in hospitals, it is not necessary to place the patients in separate wards, bed isolation being considered sufficient to prevent the infection of others. It is clear, however, that, unless suitable precautions are taken with respect to the infectious discharges, the virus will be disseminated from any given patient, so that the sole means for adequate control seems to be compulsory hospitalization at the earliest possible moment. Drs. A. L. Hoyne and F. E. Cepelka (*Jour. A. M. A.*, Aug. 26) believe that an isolation-period of three weeks from the date of attack probably is sufficient to remove the further possibility of infection.

In the same number of *The Journal*, Dr. A. Sophian asserts that quarantine of the sick should be urged and that, at least for the present, it should cover the probable period of the acute disease, about eight weeks. Since the disease is disseminated along the course of human travel and intercourse, it is important to extend the quarantine-measures in this direction, and include virtually all children under ten years, who may come from cities in which the disease is actively epidemic. It is also considered wise to remove all patients from their homes and establish them in special hospitals.

Since early diagnosis and the diagnosis of abortive cases are of particular importance, cooperation of the medical profession is urged for the early reporting of suspected cases, which then are to be investigated by a diagnostic committee composed of physicians especially trained for the work.

Miscellaneous Articles



Some Cases of Hysteria. Apomorphine in Emergencies

THE articles on hysteria, printed recently in this journal, remind me of a few of the many similar cases that have occurred in my practice of over forty years.

A man came into my office and said, "Doctor, I want you to go and see my daughter-in-law."

"What's wrong with her"? I asked.

"I don't know, but she has sinking-spells, and I am afraid she will die, and I want you to see her at once."

"Has she had any other doctor?"

"Yes, Doctor M."

"Well, send him around, and I will go, but not without him."

On the way to the patient, who lived in the country, I asked the doctor as to the trouble in question. "I really don't know," said he. "I attended her in confinement about ten days ago. Labor was normal, and there was no trouble either then or since referable to her confinement."

"Previous health?"

"Good."

"How long married?"

"Well," said he, "there is a pointer. She has been married only about five months and her husband knew her only about a month previously; so, putting it all together, it can scarcely be claimed that he is father of the child and I presume they had some sort of family rumpus as to its paternity a few days after its birth. Since then she has attacks of seeming collapse, during which she apparently is dying, but gradually recovers."

I found the sick-room full of sympathizing friends, among whom was a near relative of mine living in the vicinity, and through whom I had previously learned something about this case. I looked at the baby, a well-nourished, healthy "kid," apparently born at full term. I found that the mother nursed it and had milk to spare. The patient, a large, well-nourished young woman, was lying in bed, apparently asleep. Her pulse was

slow, soft, and full; skin, moist and cool; no distention or tenderness of abdomen; bowels acted freely; kidneys were active; no suppression of the lochia; no trouble with the breasts. During my examination (and I was not overgentle about it), she did not arouse nor would she respond to my efforts to attract her attention; but she resisted attempts to open her mouth or eyes.

Beckoning to her relatives, we retired to another room. I asked her husband whether he had had any trouble with his wife? He replied in the negative, but rather hesitatingly. Upon further quizzing, he admitted that they had a "talk," which ended in a fit of crying on the part of the wife and mother, and that the "spells" had occurred subsequently to that day.

"Well," said the mother-in-law, "what is the matter with her?"

"Nothing but hysterics," I replied. The woman bristled up like a sitting hen and went for me with all the vigorous language at her command, ending with the statement that the patient would surely die in one of the "spells."

"All right," I replied, "but she won't; and Doctor M. will bring her out all right."

Here my relative interposed: "Doctor, I think you must be mistaken, you ought to see her in one of her spells."

Just at this juncture a sister came out and announced that the patient was going into a "spell." It hardly is believable what a change had occurred in the woman during the brief space of time we had been away from her. Her face was pale and covered with a clammy sweat, she was pulseless and there was only a flutter of respiration; head was retracted, eyes were rolled up, hands were clenched and her whole body was rigid; and, except for this rigidity, she was in a condition of collapse. A bottle of medicine, which I had been informed was a bromide-mixture, stood on a stand near by. I tried to put a

spoonful of it into her mouth, but she blew it into my face; thus convincing me that she was not unconscious. I then asked Doctor M. for his chloroform-bottle, then poured a little of it on a handkerchief and held it to her nose. At the first whiff, she relaxed her rigidity and cried out, "You will choke me!"

"Why, Kate," said her sister, "you won't choke when you can cry that way."

"Will you take your medicine?" I asked.

"Yes," she answered, but blew it out when I attempted to give it. I again administered the chloroform, then, in spite of her struggles and screams, aided by her husband, who held her hands, I put her to sleep. I then departed with the recommendation to use the chloroform whenever she began to have a "spell."

About two weeks afterward, I met the father-in-law and inquired about the woman. The volume of profanity that my inquiry evoked made me question as to whether I was in hell or in Texas.

"Well, any more 'spells?'"

"'Spells'—hell no! You were right, doctor, nothing but hysterics." A domestic rumpus and a desire for sympathy was the cause of the whole trouble.

Another time I was called one night to a "beehive" tenement, to see a girl in "fits," found a girl of fifteen or so and a room full of people. Heard a history of suppressed menses. Two doctors had been to see her during the day and had left in disgust. In examining her, she made a grab for my throat and brought away my necktie and collar. I responded with a vigorous slap across her face, whereat she looked surprised, then turned over, began to whimper and went into a fit, which required two persons to hold her on the bed. I administered chloroform and put her to sleep. I left a little of the latter with her brother, with instructions to use it as needed to control her "fits." Met the brother the next day. "Any more fits?"

"No," he replied, "she began one, but quit when I got the chloroform. But she says, 'damn that doctor, I'll slap him in the face if ever I meet him on the street.'" But she never did.

At still another time, I was called in consultation by a country doctor. I found his woman patient had hysteroepileptic convulsions. Her doctor had been keeping her under the influence of chloroform for several hours, but the attacks would recur as soon as she revived. I recognized the patient as one with whom I had had some previous experience, and, so, advised a hypodermic dose of apomorphine. This was given, and, it got

in its work promptly. After thorough emesis she went to sleep and no more convulsions occurred.

Speaking of apomorphine, I will say that it is a sure remedy when needed, and I never am without it. A messenger called me one Sunday to a young man who had swallowed a dozen 1-8-grain morphine pills. He had just eaten a hearty dinner, quarrelled with his girl, and decided he would shuffle off this mortal coil. A few of the pills left in the box showed them to be gelatin-coated and very hard and dry. He protested that he did not want to live and would not take anything. But I gave him a good-sized injection of apomorphine. Directly he rolled over on the bed, thrust his head out of the window and "whooped up" his dinner and with it the undissolved pills. He changed his mind and concluded that he would try to endure the ills of this life a little longer.

One night I was called to see a young man who had a "stroke." I found a vigorous, healthy young fellow, who had been helping a neighbor, at threshing, had worked until dark, ate a hearty supper, came home tired and went to bed. Later the family, hearing him groaning and tossing on his bed, found that they could not arouse him from sleep. He had a hot, dry skin, a slow, tense pulse. face was congested, eyes were suffused, and he was restless and apparently unconscious. There was no paralysis. I reasoned as follows: Man tired, hearty supper, no digestion, fermentation, autointoxication. I gave an injection of apomorphine and got a slop-bucket ready. He soon half filled the bucket with a sour mass that would have disgusted a pig. I made him drink water until he had washed out his stomach, and vomiting ceased. He looked around and asked, "What in hell is the matter?" "Nothing at all," I replied, "Go to sleep." This he did, and was all right the next day.

E. H. KING.

Muscatine, Ia.

SULPHUR IN THE SOCKS: AN EXPERIMENT

Place a silver matchbox or small spoon in your upper vest-pocket. Place a teaspoonful of powdered sulphur in each shoe for three days. On the fourth day, look at the silver. Then you might write a little article for *THE AMERICAN JOURNAL OF CLINICAL MEDICINE* explaining what you have seen.

How long has the present writer used this treatment? Do not recollect. Perhaps Dr

Charles Bell White will be able to recall the date when he said harsh things because his thermometer-case and other similar articles went to the bad. That was sometime prior to 1895. And the present writer had a long experience with the sulphur before recommending it to the Doctor.

DOUGLAS H. STEWART.

New York, N. Y.

[Doctor Stewart suggests the preceding when "The salicylates or alkalis do not appear to be showing the results that they should." He adds that the method proposed is a powerful adjuvant to any plan of treatment for the rheumatic, but, in itself "not a plan of treatment."—Ed.]

"HEART FAILURE" OF THE AGED

The prevalence, during the early spring, of sudden collapse among the aged is becoming a problem of considerable moment to the medical profession here as well as elsewhere; moreover, it appears to be a malady not yet thoroughly understood. Within the past five weeks, there have been twice as many cases within the scope of my immediate acquaintance, and of these four proved fatal. In every instance, the victim was past fifty years of age, while in the fatal cases all were above sixty-five. In everyone of them, there was a variable period of unconsciousness or semi-consciousness attending and following the attack.

The patient is usually attending to his regular business and apparently in normal health. The attack comes on without any prodromal symptoms or aura. The symptoms are described as follows: a feeling of intense weakness; loss of sensibility; impairment and sometimes complete loss of vision; coldness of extremities; a feeling as if the heart had stopped. The subjects look pale, to lividness, the condition resembling (and really being) a form of syncope; they either fall or quickly assume a sitting or recumbent position; their mind is either distracted or a complete blank for a variable time, this often lasting until the morning after the attack; the heart is extremely weak; the skin is moist with a cold perspiration; sometimes there is nausea and vomiting; the tongue is dry, flaccid, and coated with a brownish-white slime; respiration is slow, feeble and shallow; the skin is muddy, icteroid, but often of a peculiar cyanotic hue; the victims are—as they look—seriously ill.

Recovery is usually slow; but, if the termination is fatal, it comes quickly and easily. Thus, in one case that came under my observation, the victim, a farmer of 68, died sitting in a barber-shop; he was waiting his turn to get shaved. He never moved a muscle or uttered a word; he simply laid his head back against the wall and seemed to have fallen asleep.

The physical condition of the patients suggests the name "cardiac inertia." But the agencies operating to produce the inertia are still a matter of some speculation, although it seems quite reasonable to class it among the autoinfections. Such a condition, it is reasonable to assume, would result from the accumulation of toxins in the system following the sluggish elimination by the skin throughout the cold season.

I should like very much to hear the opinion of readers of this journal upon this altogether too prevalent malady. Thus far, my treatment has been entirely upon the line of indications—eliminants, stimulants, tonics, and hygienics.

LEWIS W. SPRADLING.

Athens, Tenn.

AN OPENING IN MICHIGAN

There is an excellent opening in Michigan for a good general practice in a live town. Write us and we will give you details.

THE ERRORS OF THE MALE MENOPAUSE

It is quite true that men with certain inherited tendencies break loose after middle age and do things that shock their friends and neighbors. Their conduct, however, rarely surprises those who know them intimately and have been familiar with their private lives. Their "sudden lapse" is merely the culmination of a series of processes, mental or motor, that have led up to the catastrophe.

The tree falls or the foundations give away "suddenly." But only apparently so. There has been going on a loosening for some time and everything was logically ready for the break. Little by little such men have "gone bad," whether in business, domestic life or personal habits. The end may be spectacular for the public, although being only the expected outcome of daily thought and leaning.

Good men do not go bad suddenly. Go back to their early days; find out what sort of boys they were at home and in their com-

munities. Follow them out at college among their fellows. What was their example there? Then into active life in the first town in which they began work. What did they do there? Learn with whom they associated themselves; what side have they taken in community-matters? What has been their attitude, throughout, toward women, and their treatment of them? What do their wives say, and their intimate relations?

These remarks are suggested by a certain article appearing in *The Phoenix*, one which indicates close insight into character.

Although we may not agree entirely with the deductions of the author, we must say that a large part of his assertions are true.

The passions make trouble for us during the greater part of our lives, and it may be true that, in a sense, they are themselves the deepest potential proof of life.

It is a common error to suppose that the most tragic and violent effects are limited to youth.

No, it is not youth that furnishes the darkest, the most fatal and convulsing drama of passion, but rather that period of life which we call middle-age—the period beginning, in man, at the forty-fifth, and, in woman, at the thirty-fifth year.

This condition is one that calls for the fullest understanding, a psychological as well as physiological explanation.

The malady of false youth is largely induced by the fear of age, with consequent loss of power of pleasing the opposite sex. It may be that such fear is stronger in women than in men: the reserve which women maintain on the subject and the mystery with which it is enveloped yield no positive clue.

False youth comes to both, and for the woman no less than for man it is potent to tear up the rooted sacred ties of life, to flout the honor of marriage, corrupt the innocence of childhood, and turn the sanctuary of home into a romping-place for devils!

This tendency or weakness or perversity is not universal, by any means, and I am inclined to doubt its prevalence among women to a large degree. There are abnormal cases, of course, but, as a rule, women who are married need no watching. They are true to one man. Even extreme domestic unhappiness may not drive them elsewhere.

With men, it is different. The best qualities of a man's virtue may lead him away from those who make him unhappy—even from the bonds of wedlock—to where he can love and be loved. And such a feeling the world

understands and condones. If he defies conventions and ignores law, it is different. He may not do this. So, Roosevelt said the other day, "I can forgive most of the purple passions in men"—but not brutality or bigamy.

Unkindness, ingratitude, lack of charity and pity, inexorable inhuman hardness, revenge, vengeance, the desire to "get even" are the real sins of men, not errors of conduct or judgment based upon an expression of love or human passion.

E. S. GOODHUE.

Holualoa, Hawaii.

THE PREVALENCE OF INFANTILE PARALYSIS

From *The Weekly Bulletin* of the Department of Health of the City of New York, we learn that up to September 7 the epidemic of anterior poliomyelitis in that city had claimed a total of 8389 victims, 2074 of whom have died. These cases were distributed as follows: In Manhattan there were 2321, with 542 deaths; in the Bronx, 515, with 126 deaths; in Brooklyn, 4345, with 1064 deaths; in Queens, 1029, with 289 deaths; and in Richmond, 279, with 54 deaths.

The latest available statistics covering all cases of infantile paralysis reported from the rest of the country we find published in *Public Health Reports* for September 1. In Illinois, for instance, 355 cases were reported between July 1 and August 26, with 31 deaths. (Of these cases, 122 occurred in Chicago between June 18 and August 26.) New Jersey reports the greatest number of cases of any state, except New York, a total of 2478 having occurred between July 1 and August 28. Philadelphia reported 383 cases between June 26 and August 26; Jersey City, 126 cases between July 2 and August 26; Newark, 955 cases between July 18 and August 19; Toledo, Ohio, reported 78 cases between June 18 and August 26. (According to population, this city has suffered relatively more severely from infantile paralysis than any other in the West.) Quite a number of cases were reported from Minneapolis and St. Paul; to be exact, 42 in Minneapolis between July 30 and August 26, and 40 in St. Paul between July 2 and August 26. Scattering cases are reported from many other places.

It is a pleasure to be able to say that at the present time there is a very general decline of the disease all over the country, and probably by the time this number of *CLINICAL MEDICINE* reaches its readers the epidemic will be

practically at an end, although, of course, a good many sporadic cases are sure still to occur, while the possibility of winter epidemics must not be lost sight of.

THEIR FIFTIETH ANNIVERSARY

We have just received from Mr. Harry Skillman, advertising manager of Parke, Davis & Co., a beautifully illustrated and printed Jubilee Souvenir, telling in modest language of the fifty years of service of that house, which is celebrating its fiftieth anniversary on October 26th.

The Jubilee Souvenir is a work of art, ably written, thoroughly in keeping with the clean-cut character of the great institution whose achievements it records. CLINICAL MEDICINE extends its heartiest congratulations to Mr. Frank G. Ryan, president of Parke, Davis & Co., and to every member of his brilliant corps of assistants.

EMETINE IN INTESTINAL CANCER QUININE IN TONGUE CANCER

There are few enough specifics in medicine and, therefore, it is natural that when we find a drug which, like emetine, possesses absolutely certain curative action in amebic dysentery, we should try it in other diseases, in the hope that it may prove specific in more than one respect. Thus, emetine now is being used in typhoid fever (Frazier) with, it is averred, most wonderful results.

I myself have given alcresta ipecac (a compound of ipecac with fullers' earth—which latter prevents its nauseating action) in the ordinary enteritis, where there was no suspicion of amebiasis, and apparently with excellent effect. More recently, after having read about the employment of emetine for hemostasis in the hemorrhages of pulmonary tuberculosis, I decided to try alcresta ipecac in cases of intestinal cancer, with almost continuous capillary hemorrhage.

Before going on with the subject, I want to say that I live very far from a laboratory where a microscopic examination of cancerous tissue might be made; so, therefore, when I say cancer of the intestine, I mean that several of us country practitioners, after a thorough examination and the exclusion of any other cause, decided upon this diagnosis in the cases in question. Also, I may mention that so far we have tried the alcresta in only two cases, but in these we were reasonably certain of our diagnosis.

In both of these cases, the subjects were

elderly women in whom cachexia was markedly present when first we saw them. Both were greatly exsanguinated from the daily passage of feces that were of a tarry aspect, and each had a painful tumor plainly palpable and giving almost continuous pain, unaffected by the intake of nourishment. Both women have been under the treatment indicated for the past six months, and both have had much less pain, have a better appetite, less hemorrhages, and more strength. At first I gave them emetine hypodermically and then, on account of these patients' objection to the needle, the alcresta ipecac internally. When, one time, about three months ago, I was unable to obtain these tablets, the pains and hemorrhage returned. Fortunately, I got some more of the drug after a few days, and the symptoms ceased upon its resumption. I could find no amebiasis in the stools of either patient.

On several occasions I have found that in inoperable cases of cancer of the tongue applications of gauze saturated with a strong solution of quinine to the ulcerated cavity would check the pain and the discharge, and even seem, for a time, to arrest the tumor's growth. Possibly, since, as I understand, emetine is an alkaloid of a composition not unlike that of quinine, it may be possible to find in its use an alkaloidal treatment of cancer. In the meanwhile, I should like to know whether anyone else has had any experience in this direction.

A. K. MOILLIET.

Minatitlan, Vera Cruz, Mexico.

[We have heard of some cases of undoubted cancer in which really remarkable improvement followed injection (subcutaneous) of large doses of emetine hydrochloride. The alkaloid has been employed in this way by a prominent Chicago surgeon in one hospital in this city. We are not prepared to indorse this treatment, but we should like to see a careful investigation of it made. We welcome these reports, and thank Doctor Moilliet for this story of his experience.—Ed.]

MYRRH AND QUININE FOR CHRONIC MALARIA

In 1898, I wrote a short article on the use of myrrh for the treatment of malarial fever, which was published in *The Medical Record* for August 20. The fact that this article was published so long ago and the further fact that I get such good results from its use, as do dozens of other doctors who have

used myrrh in malaria, at my suggestion, is my excuse for again calling the attention of the profession to the use of this drug, in conjunction with quinine, in the condition named.

As I said in the article referred to, I do not claim to have made this discovery. Let me state how I first came to use it.

Dr. Wm. H. Ribble Sr., of Wytheville, Virginia (died several years ago), said to me, on one occasion, that he would tell me how to break up any attack of malaria, and then proceeded to tell me the following story.

As one day he was jogging along a country road in Nelson County, Virginia, some twenty years before, he was joined by a Methodist circuit-rider. When the old preacher learned that Doctor Ribble was going to visit a man having chills and fever, and that in spite of the large doses of quinine and all his treatment the man continued to have chills, the old gentleman then said: "If you promise not to tell anyone, I will tell you what will cure your man." And this was his prescription:

Mix 40 grains of quinine, 20 grains of myrrh, and 10 grains extract of licorice, and make into 40 pills. Take one pill every two hours, until all are taken. That was all.

As the old man rode off, he repeated: "The chills will stop, and your man will have no more."

Doctor Ribble told me that he followed the preacher's directions, and, sure enough, the patient promptly got well. He now had been using the same prescription for over twenty years and always with the same good results. He added that he supposed the old fellow was dead by now and that he hardly committed a breach of confidence by telling his secret now, after twenty years had lapsed.

After this conversation with Doctor Ribble, I began the use of myrrh and quinine, writing for 40 capsules, each containing 1 grain of bisulphate of quinine and 1-2 grain of powdered myrrh, the patient to take 1 capsule every two hours from the time he awoke in the morning until bedtime. And I always effected a cure. The licorice, of course, has no virtue, being used simply as a binder to hold the myrrh and quinine together, so as to make the pillmass.

I was desirous to know in what way myrrh could be of benefit in malaria, so consulted a number of materia medicas as to the action of myrrh, but with little or no satisfaction. Finally, in a little book, namely, Bing's "Elements of Therapeutics," I found the statement that myrrh given internally in-

creases the number of white corpuscles of the blood fourfold. Now, we are told that the leukocytes are the scavengers of the blood; so, if myrrh increases their number, the malarial plasmodia are more readily exterminated.

I am convinced that small doses of quinine given at short intervals are more efficacious than large doses at long intervals.

It may be—though I confess it is a rather farfetched idea—that the reason why the ancient Egyptians were cured of their various fevers and other illnesses by going to the temple of Isis and praying a week or more to this goddess, was because of the fact that myrrh was continually burning on the altar. As a consequence, the votaries plentifully inhaled the fumes of myrrh and thus received its physiological effects.

AARON JEFFERY.

Newport News, Va.

PELLAGRA: ITS CAUSE AND CURE

After ten years of diligent study and careful investigation, I have reached certain definite and dependable conclusions as to the cause of pellagra, also as to the treatment and cure of this disease, which is one of the grave diseases to which America has fallen heir from the Old World. Before describing my rational method of treatment, I will recite the following conclusions.

1. After caring for hundreds of pellagra patients, I have demonstrated that over 85 percent of these, as they come to the general practitioner for treatment, can be cured, so that they will stay well.

2. Regulated diet alone, no matter how well selected, will not effect a cure, except possibly in a very few instances.

3. The primary cause of pellagra has not as yet been found. It is not true that an unbalanced diet, as some claim, is wholly responsible for the disease.

4. Pellagra is transmissible from person to person in a rather slow and unusual way. A close study of cases in private practice indicates that long intimate contact with these patients is, probably, one of the greatest factors in this transmission.

It is my personal opinion, amounting to a strong conviction, that the toxic manifestation in pellagra is the result of deranged functioning of the ductless glands.

As to treatment, I have found the most gratifying results are to be obtained by those curative measures which act both directly and indirectly. The following remedies are

suggested as the most valuable of the corrective class.

Arsenic. This, in the form of sodium cacodylate, has given me the most satisfactory service in hundreds of cases of pellagra during the past ten years.

Gold. This, in the form of solution of gold and sodium chloride, is given both by mouth and subcutaneously. I regard this preparation most indispensable. A double effect is secured from it, in that it, besides being promptly curative, also is a nerve tonic and calmative. Patients suffering from mental aberration or dementia have been permanently cured with the solution of gold and arsenic bromide.

Nuclein and protonuclein. These two preparations are given in tablet form by the mouth, or in solution hypodermatically. I am convinced that the tissue metamorphosis is materially increased by their use. It is quite likely that the beneficial effect is direct as well as indirect.

Cooper's well water. In my experience, this natural mineral water is a valuable and dependable dietetical aid in repairing the ravages produced by pellagra. It acts mainly as a direct corrective, and probably acts indirectly also. The same may be said of chloride of sodium, when properly used.

The following is a list of the indirect correctives: Cooper's well water, digestive ferments and enzymes, hydrochloric acid, a well-selected dietary, the very best sanitation and hygiene.

In the care of pellagra-patients, as is also true of tuberculosis, it is extremely important to observe how, when, and what the patient should be fed. The chief aim should be, to eat as fully at the three regular meals as the condition of the digestion will permit, masticating slowly and thoroughly, keeping the mind free from all fret and worry during the period of eating and digesting the material.

At 10 a. m. and 3:30 p. m., the patient should take one or two glassfuls of whole sweet milk, into each of which has been stirred a tablespoonful of lime-water. A liberal quantity of well-buttered toast or wafers may be supplied with each glass of milk. If a change is desired, two raw eggs may be substituted for the toast, wafers and milk. This full, forced feeding is one of the most essential things to consider in treating any case of pellagra. The benefit secured by a patient suffering from this disease comes in the same indirect way and through the same physical channels as in the case of tuberculosis.

The following list includes articles of food mentioned in the order of their importance and constant availability as well as of their nutritive and therapeutic value.

Fresh beef, good quality. Raw, scraped, as sandwiches; rare steak or roast. These stand easily at the head of the list; even when thoroughly cooked, beef is valuable.

Milk. Plain, with lime-water, carbonated or peptonized; cream; buttermilk. These come next in importance to fresh beef, in being constantly available as well as in food value.

Eggs, whole or white only. Boiled, poached, in omelet, or raw.

Fresh fish. Boiled, broiled or baked.

Oysters. Raw or cooked.

Game or wild fowl, whenever obtainable, are especially beneficial.

Vegetables, in season. Beans and peas may be preferable, on account of their similarity in food content to meats.

Fruits, if fresh and ripe, may be taken as desired, but not at times when they will interfere with the ingestion of more important articles of diet.

Nuts, wild or domesticated, seem to be especially good. The pecan is obtained most readily here in the South and is equal or superior in food value to any other. Great care should be exercised to masticate nuts very thoroughly, else digestive disturbance will result and thus harm rather than good be done.

Bread and cereals, any kind desired, may be eaten; but bread made from whole wheat or graham flour is best, unless the bowels are too active, in which case rice, white bread or toast should be selected. Best of all, though, I have found, are corn-pone, egg-bread, egg-bread muffins, and cornmeal hoe-cake, all of which are palatable and efficient in a nutritive way, if made from home-grown, home-ground, and home- or hand-sifted cornmeal made from *live grain*, that is, corn with its germinating power and properties and chemical vitality undestroyed or undisturbed by any process, be it heat, kiln-drying or other procedure.

For a bread to serve its full purpose as a nutrient material in the human "gristmill," or body, it must of necessity have in its entirety that vital chemical constituent by which, under the proper conditions in the soil and at the season, it can and will germinate, develop and reproduce itself. This property or germinating-power in the grain from which our bread is made feeds, stimulates, and vitalizes the highest function in the animal organism fed by it; this is beyond

question. All this is as true of the breads and breakfast foods made from wheat or any other grain, as it is about corn.

Drinks. Pure, fresh water, whole sweet milk, fresh buttermilk, either with or without cream, egg-flips, hot cocoa or chocolate. It is important that neither coffee, tea, coca-cola nor stimulating narcotics are taken.

L. H. HOWARD.

Jackson, Miss.

POISON-IVY AND RHUS-DERMATITIS

Some good advice regarding the treatment of poison-rhus dermatitides is given in *The Journal of the American Medical Association* for September 2 (p. 763). In answer to a query, the editor makes the following statement:

"It has been shown that the poisonous constituent of the poison-ivy is neither volatile nor water-soluble, the popular belief to the contrary notwithstanding. Instead, the poison exists in the form of a thick emulsion, which readily sticks to the hands and clothing and which under certain conditions may retain its activity for months or years. The great abundance of poison-ivy makes it easy for the clothing to become contaminated with this emulsion without the knowledge of the wearer, so that poisoning may take place at any time.

"After the symptoms appear, the sufferer may remember that two or three days previously he had walked near some of the toxic plants, but knows that he did not touch any of them. He assumes, therefore, that the poison must have reached him by passing through the air. Then, too, there are a large number of plants which are reported to have occasionally produced poisoning like that from rhus, so that it is probable that in some cases of supposed poisoning without contact the victims may have encountered some one of these, rather than one of the rhus species. It was formerly believed that the rhus-poison existed in the pollen and in the minute hairs of the plants. Alighting on the skins of sensitive persons, especially if the victims are perspiring, the pollen-grains or hairs are not easily rubbed off, and it was assumed that poisoning might result. Many cases of poisoning without known contact with the plants were accounted for in this way, until it was shown by indisputable chemical tests that neither the plant-hairs nor the pollen-grains contain any of the poison.

"Since the poison is soluble in alcohol and in alkalis, the best preventive of poisoning

after exposure is, to wash the parts with alcohol or with alcohol containing a little dissolved sodium hydroxide. In absence of alcohol, gasolin may be used. An aqueous solution of an alkaline soap is effective. An aqueous solution of sodium bicarbonate is less effective, but is useful."

MORE CASES OF LIGHTNING-STROKE

The two cases of lightning-stroke to be considered here present features of interest and value and call for scientific consideration.

Case 1. A man had to cross a small stream in visiting a near neighbor, and pending his stay at the latter's home there occurred a severe thunder-storm, during which the man was supposed to have been killed by a stroke of lightning. His neighbors placed him on his back, in a spring-wagon, on a bed of straw and started to take the supposed corpse home. In passing over the stream of water, which was now swollen so that the water came up over the "dead" man's body, the latter, to their amazement, arose and demanded to know what they were doing with him there!

Now, what was the therapeutic action of the water? Should such victims be placed in cold water? But, do not overlook the lungmoter, friction, atropine, glonoin, and strychnine, and heat to the extremities.

Has there ever occurred a similar case?

Case 2. This case resulted in more ultimate good than damage. I had a two-story house on high ground in Kansas City, Kansas. It was occupied by four persons. The woman of the house had been badly afflicted with inflammatory rheumatism, being confined to bed much of the time. Improvement had taken place, so that she was able to take her place at the dining-table. One morning she and the others had seated themselves at the breakfast-table when lightning struck the chimney, shattering it badly and setting fire to the shingle roof. Part of the stroke passed the tin spouting to the cistern. The other part of the current passed down the flue to a stovepipe-hole in the dining-room and thence diagonally through the room over the heads of the party at the table and then to an outside porch, where it melted the wire screen and did other damage.

The rheumatic woman arose from the table entirely free from her affliction—and has remained permanently cured. No shock was experienced by others of the party.

I have personal knowledge of the fact in this case. We certainly have something to

learn as to the action of electricity upon the human system.

I never heard of a similar case. But there may have been others. I once saw an electric-line-man who became entangled in a coil of live wire. He told me that while in that condition he could hear every click and sound of the machinery in the power house—which was a mile distant! He acted the part of a telephone receiver.

C. E. WITHAM.

Lawrence, Kan.

STILL ANOTHER CASE OF LIGHTNING-STROKE

The articles printed in *CLINICAL MEDICINE* regarding persons struck by lightning recall a case of this nature that occurred in my own practice.

On August 11, 1914, a young man, about 21 years of age, was working in a hay field in company with several other men, when an electrical rain storm came up, and they took shelter in haystacks. Running from one shock to another and, just squatting to get in under the hay, this young fellow was struck by a discharge of lightning. He was picked up for dead, but, showing signs of life, he was vigorously rubbed for a few moments by his companions and then hauled home.

When I was summoned I found him in a state of shock, collapse threatening—stertorous breathing, pulse almost imperceptible at the wrist, pupils dilated, blood exuding from the right ear, nose and mouth. Death seemed imminent.

He had received the stroke above and posterior to the right ear. There were two spots of about the size of a silver dollar where the hair was burned as close to the scalp as if it had been cut with clippers, and the burn extended down the right side of the neck, out to the right shoulder, across the breast to the left side, then down the left leg and foot and out between small, third, and fourth toes, tearing the last two apart. He had on a pair of heavy work-shoes laced with strings of raw-hide, and the left shoe was torn from the foot and hurled a distance of thirty feet away. His hat was a heavy "buckeye" and its crown was torn to pieces. His shirt and trousers looked as though they had passed through a threshing-machine. The drum of the right ear was ruptured.

I gave him hypodermics of nitroglycerin, digitalin, strychnine and atropine, and applied heat to the extremities. (Treatment, as you will observe, conformed to that recommended

by the editor in his note to Doctor Simmons' article.)

Reaction began to show in about two hours, though the man continued unconscious for about thirty hours. He had to be catheterized for three or four days. Deafness was complete for three weeks. His home was within fifty feet of the railroad and situated about midway between two crossings, so, all trains passing each way would whistle in front of the house, but he could not hear these sounds.

The patient recovered gradually and slowly regained his hearing to such an extent, that now, by observing closely, he can hear loud conversation very distinctly. The drum of the right ear healed, and at present hearing in this ear really is better than in the left one. He works on the farm every day. About six weeks ago he made application for life-insurance and was accepted, after undergoing a very rigid examination.

J. G. RENAKER.

Dry Ridge, Ky.

SODIUM CACODYLATE IN LUETIC RHEUMATISM

I have read with great interest the discussions anent the treatment of luetic conditions with cacodylate of sodium, and I want to register my experience with those who have found efficacy in the treatment with it.

A young man came to me for treatment for rheumatism. He had been working in a damp cold cellar of a packing plant. The company's doctor had treated him, but gave him no relief. I instituted a thorough cleanup and cleanup course, à la Abbott, choosing as a purgative—calomel, grs. 8; podophylin, gr. 1; rhubarb, grs. 6; compound jalap powder, grs. 8; sodium bicarbonate, grs. 10; divided into 4 capsules, one to be taken every hour and followed in two hours by a laxative saline.

I procured a dozen vials of sodium of cacodylate, 5 grains. I injected, hypodermically, one dose every other day, until there appeared a puffiness of the under eyelids, then I gave them only every three days, and then increased the dose from 5 grains to 7, but at longer intervals. In ten days' time, the patient was able to lay aside one crutch. In three weeks' time, he put away the other crutch, and in four weeks, which was in the autumn, he went to the cotton-patch, got fat, and weighed more than he ever did before.

I have treated other cases similarly and have had gratifying results; which, of course,

makes me somewhat biased when the discussion comes up.

By the way, I have used the cacodylate in pellagra, but did not find it dependable, although I think that, in the present state of our knowledge of the treatment, it does as well as any other remedy. None of the remedies used seem to be specific.

A. L. SAUNDERS.

Memphis, Tenn.

PROMPT ACTION OF ATROPINE IN PULMONIC EDEMA

I have been a constant reader of *THE CLINIC* for fourteen years and expect to continue until—well, the date to be inserted by Doctor Abbott when I am gone. The value, to the practitioner of medicine, of this journal can not be appraised truly by anyone.

I am considered a very successful practitioner, and I pride myself on my knowledge of the science and practice of medicine, but I must confess to the conviction, that whatever success may be mine I owe largely to *CLINICAL MEDICINE* and its many able contributors; for, without *THE CLINIC*, I believe, I should long ago have been water-logged—and you may know what happens to a water-logged craft on a tempestuous sea.

I am a graduate of the so-called scientific school of medicine, but I must, and will, say that, to get hold of a therapist, one must of necessity turn to other schools, to the Dosimetrists, the Eclectics, or even the Homeopaths. All outrank the disciples of the old school. And why? Because these practitioners study and know their *materia medica* and their therapeutics—something unknown to our own school.

The fact is, that the drugs and their properties are not considered by our students as being of much value or worth. That matter is something that the "regular" leaves to the nurse to look after. Indeed, I have often heard such doctors say to them: "O, you know what to do, better than I; give what you think is best." And that knowledge isn't much, as a rule, his prescriptions consisting mostly in an order for somebody's elixir of pepsin and, maybe, an enema—and the doctor passes on to his next patient.

How many of these practitioners understand the action of a single drug, a single active principle? What they do do, is, to prescribe by the intermediation of some pharmaceutical manufacturing house which

has bombarded them with literature and told them how to give their products. And there their knowledge ends.

This same kind of practitioner never heard that one could control a hemorrhage with the aid of atropine or emetine. He never knew that in edema of the lungs, when the victim had been unable for nights to lie down in bed and have one hour of good refreshing sleep, 1-50 grain of atropine sulphate, hypodermically administered, together with 1-6 grain of heroin, would vouchsafe to this poor sufferer his first real night's sleep, and relieve him of that horrible agony, of that slow but insidious suffocation, when he is drowning in his own fluid. He never experienced the pleasure that comes to us the following day, when we see the patient again and say to him, "Well, my man, you had a fine sleep last night, the first for a good many days?" and he smiles back a grateful smile: "You bet I did, doc, I had the finest night I have had for many a day; O, I feel just fine!"

Yes, and he does, too. He did not sit up all last night with pillows piled behind his back—no, he did not; he just went to sleep, and he lay down exactly as he did before the beginning of the trouble. No one can realize the wonderful relief the poor sufferer obtained from that grand drug atropine except the poor unfortunate himself. After this, you let your patient take doses of 1-250 grain of the sulphate every two hours and five granules at bedtime, each and every night, until all edema is gone. Then you can discontinue until another attack supervenes, which may not be for six months or a year.

Let me caution you always to watch your male patients for the effect of the atropine upon the bladder, any retention of urine calling for the immediate withdrawal of the drug. Not so, however, with female patients, in whose cases I never have had to stop it on account of its action on the bladder; they are not bothered that way.

Doctor, take my advice, never attempt to practice medicine without atropine. You *must* use it; it is essential.

N. MACFARLANE.

Los Angeles, Calif.

[Right you are. Atropine is one of our most useful remedies, and not studied or used half enough. But don't call the dosimetrists sectarians. Most of us are "regular" and "eclectic" both, that is, we belong to regular

organized medicine, and we are adopting and adapting "the best," wherever we find it.—Ed.]

ACUTE GASTRIC INDIGESTION

There exists considerable confusion respecting the difference between acute gastritis and acute gastric indigestion. Many cases of acute gastric indigestion are being diagnosed as acute gastritis. However, it must be remembered that acute gastritis is of very rare occurrence as compared with acute gastric indigestion, and that, when seen, it will generally be found to be owing to the ingestion of corrosive or irritating poisons; although it may follow the eating of food that has undergone bacterial or chemical change.

While in acute gastric indigestion the vomiting may be severe, it generally is transient. There is no doubt in my opinion that many cases of persistent vomiting are diagnosed as gastritis, when actually the vomiting is the result of cerebral or uremic origin. Then, only recently the writer was called in consultation to a case of acute gastritis which proved to be due to an obstruction of the small intestine.

In performing autopsies on infants and children up to six years of age, it is very rare to find lesions of the stomach, although there may have been persistent vomiting for days before death ensued. This is especially true in children who have died from gastroenteric disease, namely, cholera infantum.

Acute gastric indigestion is manifested by vomiting that occurs suddenly and repeatedly, often accompanied by fever and always by prostration. Generally there is disgust for food; still, I have seen a few cases in which the little patients seemed starved although they took food with avidity—but it was ejected almost as soon as swallowed. This abnormal appetite, the writer believes, often is due to the great thirst experienced. The temperature often is 103° and in some cases may reach 105° F., although in a few cases seen the temperature remained normal or even below. Almost at the start or at least in twelve to twenty-four hours, there is evidence of bowel disturbance; the stools contain indigested food, are of greenish color and contain more or less mucus. The abdomen may at times become distended but not always. If the attack is prolonged, the abdomen often becomes very flat.

The first thing to be done is, to administer a high enema. I want to lay stress on this

procedure; it should, in fact, be the initial treatment in any illness of any nature in which there is acute vomiting and an absence of free bowel movement. Should the vomiting continue after the initial enema, the stomach should be lavaged at least once, regardless of the exciting cause. If the vomiting be persistent, give no food for twelve hours, at least. The colonic flushing should be repeated from time to time in order to supply to the organism the lost fluids. No food should be given for twelve to twenty-four hours, according to the severity of the symptoms, then some barley-water, mutton-broth, or milk well diluted with water may be tried in teaspoonful doses every half hour. In older children, I have had most excellent success from fresh buttermilk in spoonful doses. Should the matter vomited be very acid and the stools green, lime-water or chalk is to be given. If the food or water again is rejected, a further rest for the stomach should be ordered. Nothing is to be gained by forced feeding; in fact, very often chronic gastric indigestion follows these attempts to feed the child before its stomach is in a condition to receive nutriment.

Attention here is called to introducing food with a tube in these obstinate cases of vomiting when not due to intestinal obstruction. It is a singular fact that often food is retained when put into the stomach through a tube, although vomited up if swallowed naturally. When nourishment cannot be retained after thirty-six hours of fasting, when given [naturally or by the tube, it is best to begin feeding by the rectum. For this purpose, use completely peptonized milk and give at intervals of from six to eight hours, in quantities of from 2 to 4 ounces for infants and of from 6 to 12 ounces for children from eight to ten years of age. I have found applications of heat or counterirritation over the stomach-area of very little value. For infants or children under two years, fresh peppermint-herb, well bruised and wet with brandy or dilute alcohol, has been of service in allaying distress and vomiting.

In my early practice, I treated these cases purely with drugs, and the results were varied, indeed. In later years, many drugs have been discarded as useless. The initial enema, recumbent position, withholding of food for twelve to twenty-four to thirty-six hours, and colonic flushes with physiologic salt-solution, to supply to the system the lost fluids, has brought me far better results.

However, if a certain drug is indicated, I do not hesitate to give it. Calomel in minute

doses, say, 1-10 grain every half hour (as nearly dry as possible) until 1-2 to 1 grain, according to age, is given, has been of service in allaying the vomiting and bringing the attack to a standstill. When the vomiting is controlled, the calomel should be followed by a laxative saline dissolved in hot water. I have found the "anodyne for infants," in small doses, effective in allaying the vomiting, and in producing the quietude that is so essential.

As soon as the vomiting is controlled, if the temperature remains high, I give aconite hydrobromide in small doses, often repeated, until the arterial tension is reduced and the skin active; thereafter as indicated.

It sometimes occurs that the vomiting is so severe, so frequent, and so urgent that I have to give morphine hypodermically. The morphine should always be guarded by atropine, in the relative proportion of 1 to 1-20 grain, or, 500 : 1. Thus, children between six and ten years should receive 1-10 grain of morphine and 1-200 grain of atropine, while for children one to two years old the dose should be, of morphine, 1-50 grain, and of atropine, 1-1000 grain. It seldom is necessary to repeat this medication. When it is, the indications will appear in about six or eight hours after the first dose.

As these patients improve and are carefully returning to their former diet, you will give hydrastoid before meals, in order to restore the tone of the gastric mucosa, and diastase and papain after meals, to aid the weakened stomach in performing its function.

C. W. CANAN.

Orkney Springs, Va.

CHLORAZENE: MY EXPERIENCE WITH THIS ANTISEPTIC

I bought 4 ounces of chlorazene from The Abbott Laboratories very soon after they put this new antiseptic on the market and have been using it in my practice now about five weeks. I must confess that I am amazed, almost carried off my feet, by the wonderful germkilling and antiseptic properties it has developed in my hands thus far. Let me relate some of my experiences with it.

Case 1. On the night of August 27, a number of Mexicans were having a celebration that ended in a drunken fight. One of the party received a blow with a dirt-soiled brick that laid the skin open across the center of the frontal bone, from the eyebrow to the hair; the cut being about 3 inches long and leaving the glistening skull bone bare in its center. The edges were ragged, and, being exactly

in the center of the frontal bone, there was not much hemorrhage to wash out the wound. Stunned and drunken, the fellow slept the rest of the night without receiving medical attention.

The next morning, I picked the hairs and other foreign matter out of the wound, sprinkled about half a thimbleful of chlorazene powder (plain) into it and rubbed the skin around so as to get the powder all over the wounded surface, then inserted three sutures. The chlorazene produced a little burning sensation for about two minutes and caused the blood-mixed serum that was oozing out to turn to a brownish color. I laid a plain clean piece of cloth (not medicated or sterilized) over the spot, then tied a large clean handkerchief around the head. I never dressed the wound again, for it healed by first intention without there being any pus, pain or swelling.

I had every reason to believe that this was a seriously infected wound. I believe that, had I swabbed it out with iodine (as would have been my treatment had I not used the chlorazene), this man's eyes would have swelled shut and I should have had a suppurating wound taking three weeks to heal. As it was, I removed the sutures on the eighth day, and all was well.

Case 2. A girl now ten years old, underwent an operation for the removal of adenoids more than a year ago. She now has catarrh of the nose and the adenoid growths still are bothering her. The nose has been suppurating for a year or more. With some difficulty I taught this child to use a douche, after the mother insisted it could not be done. I first ordered the use of plain warm water, then salt-solution, and, later, solution of potassium permanganate. Now for about three weeks she has been using a 1-percent solution of chlorazene, and this appears to be doing her good.

Case 3. One of my men patients is suffering from acidosis, and his mouth would be very sticky and nasty-tasting every morning upon awaking. Present treatment: Wash out the mouth well at bedtime with a brush, apply a bit of chlorazene powder to the tongue with the point of a knife, then, with the tongue, work it around until all the surfaces are covered with it. Swallow the saliva. The man now has a perfectly sweet mouth in the morning.

This is not an advertisement, but a pointer from the field of action. It is intended to do you good, dear reader. Here it is. Get a bottle of chlorazene and use it for everything

where you need an antiseptic locally, and do not be afraid of poisoning anybody. I have used solutions, from weakest to strongest, up to the pure powder. The pure powder will smart in a fresh cut or an open ulcer for probably a minute, but after that not nearly as badly as do many of the other applications we are employing.

And then, when you have done this, write and tell us about it. This chemical is in its swaddling clothes and we want to get all the knowledge about it that we can—and get it without delay. We have been doing surgical work with infected wounds ever since Cain killed Abel, without having a remedy that would kill the noxious germs, and yet be nontoxic. So, you see, we have been doing without this chlorazene for a long, long time—but now we want to know everything about it.

I have used chlorazene to wash out a woman's infected uterus, used it in sore eyes, and am going to use it wherever a germicide is needed, for it certainly has been giving me some surprises.

T. H. STANDLEE.

Edgewood, Tex.

[We give Doctor Standlee's experience, which is but one report out of many received. Others will appear in due season, as we begin to "find" ourselves and are in a better position to answer the numerous questions that come to us concerning this interesting and powerful antiseptic.

As we hardly need explain, chlorazene is a synthetic product, made from toluol, its chemical name being paratoluenesodiumsulphochloramide, but technically known among chemists as a "chloramine." It is but one of a series of chloramines, which were first described by the English chemist Chattaway.

The possibilities of this compound as an antiseptic were suggested a few months ago by Dr. H. D. Dakin, of the Herter Laboratory of New York, who was sent to France by the Rockefeller Institute. His work on the hypochlorites, carried out at a hospital in Compiègne, in France, in association with Dr. Alexis Carrel, made him famous. The subsequent suggestion of chloramine (chlorazene) as an antiseptic, was published in several papers in *The British Medical Journal*, and is the latest outcome of these earlier studies.

This antiseptic has been taken up in the military hospitals in Europe, and, with results that have apparently justified the enthusiastic claims made for it.

When it is recalled that, in addition to being practically nontoxic, noncaustic, and

exceedingly stable in powder and solution, chlorazene seems to be one of the most powerful antiseptics at our command, its large field of usefulness will be grasped immediately by the thoughtful physician. So powerfully antiseptic is it, in fact, that very dilute solutions suffice in most instances.

For instance: In the eye, chlorazene may be employed in 1-10 (0.1) percent solution; in throat and nose, 1-5 to 1-4 (0.2 to 0.25); in the bladder and urethra, 1-4 (0.25); in the uterus and vagina, 1-4 (0.25) to 1; and, in general surgery, as an irrigant to wounds, as a wet dressing, and for most other purposes of a similar character, from 1-2 (0.5) to 2-percent solutions. Exceptionally, as when there is a very profuse discharge from a bad wound, 4 percent or even stronger may be resorted to. It is rarely necessary to use it pure, although in England a 35-percent gauze is much employed.

Chlorazene very likely will also be used as a disinfectant for a large variety of purposes especially in the sick room and about those suffering from contagious diseases. It has been suggested that small tablets might be made for the home-sterilization of water, and this is being investigated. It has been used successfully by Colonel Gordon, of the Royal (British) Army Medical School, in steam spray, to disinfect rooms and to clear the throats of meningococcus-carriers. In fact, many ways of employing it are opening up.

We shall be much gratified if our readers will report their experiences with chlorazene. —ED.]

DIZZINESS, SEASICKNESS, VERTIGO

In the physiologies of childhood's unhappy hours, you were expected to learn and to remember what happened to a poor pigeon. In those schoolbooks, there were two pictures. One was a pigeon before its ear was opened. The other woodcut showed a pigeon with its semicircular canals cut out.

The semicircular canals are three half-pretzels placed at right angles to each other. One is horizontal, one is perpendicular east and west, the other is perpendicular north and south. The three semicircles are hollowed out and act, in the human and animal heads, much as the stabilizer of an aeroplane does. They keep men from falling, they balance birds, and they allow a fish to find its equilibrium. In fine, these three half-circles and canals are located behind the ear to prevent giddiness, vertigo, loss of balance.

They are actually meters to show which way gravity pulls.

Recent investigations on the ear by Dr. Lewis Fisher and Dr. Isaac H. Jones, of Philadelphia, make it plain that even the dizziness of high blood pressure, heart strain, and kidney disease are traceable indirectly to the vestibule of the ear, which contains these semicircular stabilizers. In other words, whether it be seasickness, vertigo or other kind of dizziness, the physiology and the anatomy of the ear labyrinth is concerned more or less.

The healthy man depends, in a large measure, upon two score or more senses, such as muscle, touch, heat, cold, pain, vision, hearing, taste, hunger, smell, and particularly this sense of equilibrium and position in space.

While it is true that a pure, unadulterated sensation from one sense rarely occurs after the moment of man's birth, it is equally correct to say that a perfect balance such as a flag-pole painter or a structural iron-worker maintains is brought about by harmony of action between several senses, such as the muscle-sense, sight, and this static sense which is under consideration.

Interference, therefore, with any of this triad, will bring to pass some sort of dizziness. The worst types, however, will be associated with disease and deformity of or accident to the semicircular "pretzels" in the ear-labyrinth.

Dizziness, seasickness or vertigo spells are caused by obstruction or disturbance of the usual relations and sensations which keep the human fluids balanced against the force of gravitation and of life.

In 1860, Professor Ménière of Paris, was the first definitely to associate one kind of falling-disease or vertigo with the semicircular canals. Since then, it has been known that the static sense, the sensation of equilibrium, rests in that place. Whenever any malady, injury or birth-condition reaches or otherwise irritates this vestibule of the ear, some kind of dizziness will occur. On the other hand, no matter how severe a disorder affects the human form divine, if it fails to interfere with the even tenor of those canals, no vertigo will appear.

It must be clear, then, that a few persons may inherit or acquire such unadaptable semicircular canals that the constant sway and motion of an ocean-steamer will disrupt the fixed fluid relationship in this labyrinth. Even the roll of a streetcar or railroad train may cause it. The upshot will be seasickness, carsickness, and other "vertiginous" attacks.

So important have these inner ear-canals become in their association with dizziness that special departments have been created at the University of Pennsylvania and the Medico-Chirurgical College in Philadelphia, according to Doctors Fisher and Jones, where special tests are carried out to determine the state of health of this static sense.

The principle, which underlies these tests is, to find the condition and the movement of the lymph in those hollow half-pretzels. When the lymph passes in a given direction, "nystagmus", or a vibratory twitch of the eyes, occurs; vertigo is felt and the individual feels like falling.

The way to set the lymph in motion is much the same as children do, to wit, "spin around and see how dizzy you feel." The doctor gives the patient a few twists on a revolving stool. The normal effects are known, and deviations from them give a diagnosis. When you are thus spun to the left, you first feel it and then you soon do not know how you are turning, because the lymph and fluid in the east and west canal catches up. When the spin is stopped, the lymph continues to move and you feel as if you are spun the wrong way, though you stand stock still.

Similar sensations of falling in a horizontal plane have to do with the horizontal canals. The sensation in a rising elevator or a rapid descent concerns the perpendicular canals. The impulse to throw yourself from a high place is supposed to be the pull of gravitation upon the lymph in the canals.

Seasickness involves first one semicircular canal and then another. One reason why purgatives (thus open bowels) help to prevent seasickness is, because the excess of lymph and fluid in the canals is removed and reduced to a minimum.

Deaf and dumb people do not become seasick, according to Dr. William Jones. Animals otherwise easily made seasick are unaffected when made deaf. Small children seldom become seasick, because the vestibule of the ear is very small. Seasickness certainly seems to be an ear condition.

L. K. HIRSHBERG.

Baltimore, Md.

THE QUESTION OF MILITARY PREPAREDNESS

To the citizen of Switzerland, it is as much a matter of course to be prepared to go to the defense of his country as it is to pay his taxes; indeed, ever since the foundation of the confederation in 1291, every able-bodied

citizen of the Republic was a soldier, while in more recent times everybody who can not or does not serve under the colors has to pay a military tax instead.

Since the movement for military preparedness has set in in our own country, the question naturally has arisen as to the best means of accomplishing this object, and, consequently, the various military systems in vogue in European countries have been investigated with a view to formulating some modified scheme suitable for adoption in the United States. Because of its many excellent features, which render it suitable for the citizenry of a republican community, the system of the Swiss federal army has received considerable attention. A concise description of it is contained in a pamphlet recently published by the New York firm of G. E. Stechert & Co.*

Switzerland covers about 16,000 square miles in the heart of the European continent; its population is 4,860,000. The country is a little less in size than our states of Vermont and New Hampshire taken together. In proportion to its size and population, the Swiss Republic can, relatively speaking, put on foot the biggest army in the world, namely, 500,000 drilled men, and this army can be mobilized within the short space of twenty-four hours.

It has been said that every Swiss citizen contributes toward the maintenance of the army, either by actual service or by paying taxes. The latter tax is paid, not alone by those who are physically disqualified to serve, but also by the citizen-soldiers in those years in which they are not actually in service.

The preparation for military service begins in the schools, in the way of compulsory gymnasium drills and the physical training without arms, which all pupils between the ages of 7 and 15 years are obliged to attend. Beginning with the age of 10 or 12 years, the schoolboys are enrolled in the cantonal (state) cadet-corps, attendance being obligatory in some of the cantons. Here, the boys undergo a very excellent military drill, this including target-practice with a rifle that is a miniature of the regular Swiss army-rifle. The cadets are instructed by regular soldiers and officers, usually under the supervision of an "instructor" of the federal army; the work of the season coming to a climax in a two days' manoeuvre, during which the "playing" at soldiering is taken decidedly seriously, indeed.

After the boys have left school, voluntary work is begun in the military-preparation companies, as established in almost every village and town, for boys between the ages of 15 and 20 years. These instructions are given by officers or non-commissioned officers.

Upon attaining the age of 20 years, the young man receives his regular arms and other equipment. These he is obliged to keep at home, in good condition and always ready for instant mobilization. He now enters the recruit-school, the training at which lasts from sixty to ninety days, according to the branch of the service. After the work in the recruit-school is completed, the young soldiers are enlisted in the regiments or batteries of their respective home towns or villages, and from then on they continue in their country's service until their forty-eighth year; or, if they become officers, they are not mustered out until they are 52 years of age.

From the recruit-school on, close attention is paid to the work done by the individual men, and those who show adaptability and fitness are ordered to attend special schools, first for noncommissioned officers and then for commissioned officers, after each course in which they are obliged to serve in a recruit-school in the rank attained.

From his twentieth to the thirty-second year, each soldier has to serve two weeks every year. The men serving in this "first class," or "Auszug," form the élite of the army, naturally, being the select of the Swiss citizenry for active service. From the thirty-third to the fortieth year, the citizen-soldiers belong to the reserve, or "Landwehr," and these are called in for two weeks every third year. From the forty-first to forty-eighth years, the men belong to what one may call the second reserve, or "Landsturm," the members of which, in time of mobilization, are employed more particularly to protect public properties, notably the railway-stations, tunnels, bridges, the alpine roads and great passes, and the like. Those not otherwise physically fit and those below or above the age-limits of service are enrolled in the unarmed "Landsturm," in which they help in any capacity for which they are best suited, this including the work of bakers, butchers, typists, clerks, ammunition-workers, and the numerous other occupations.

It has been said above that the noncommissioned and the commissioned officers are selected from the ranks of the recruits and are subjected to careful training and selection. It follows that every officer in the Swiss army

*"The Swiss System." By Captain Remy Faesch. Price, 25 cents.

has risen from the ranks, and this by virtue solely of personal merit and fitness, political or other influence being absolutely out of the question in securing the promotion of any man or officer in this democratic army of Switzerland.

The Swiss army includes all the necessary branches—infantry, cavalry, artillery, engineers, and medical corps. The care of the men in the barracks and in camp is excellent, as the present writer remembers with pleasure from personal experience. The work is hard, but effective, and the influence upon the morale of the men is an excellent one.

In the United States, the requirements of an army in time of war hitherto have been supplied by citizen volunteers, many of whom had received training in the national guards of the various states. The delicate position in which we find ourselves at present in our relations with the countries at war in Europe and also with Mexico, and particularly the need of preparing for intervention in the latter country if this should become unavoidable, makes it incumbent upon us to remember the truism to which Washington already gave expression, namely, that the best assurance of peace rests in being prepared for war; and the necessity is now manifest of preparing the young men of our country more generally than is done in the national guards.

The assertion sometimes heard, that the young American is impatient of any authority and that he would not submit to military discipline, is fatuous nonsense. Every young man of sense knows instinctively, if not deliberately, that discipline is an excellent training; and it is quite possible, even under the political and economical conditions prevailing in our country, to copy or at least to imitate the Swiss army system and to raise and develop an army in this country of ours that would be effective for all demands that possibly may be made upon it, and which could be mobilized at short notice, provided that the curse of politics could be kept out of it. To quote from an editorial in *The Chicago Tribune*:

"All would be willing to do what is necessary, if they knew that the system by which they were called were equitable and fair. Only one military system is. It is the universal system."

There are no more liberty-loving people than the Swiss. It is because of their intense love of liberty and of their country that they cheerfully submit to the discipline and to the hard work required of them as the potential

and (as during the present war) the actual defenders of their homes.

With suitable modifications, the system prevailing in the Swiss army would be excellent for maintaining peace between the United States and other nations. It would be democratic in its very nature, and would be a means of raising the military life of our country to an efficient and dignified level such as could, and would, claim the respect of other nations, precisely as does that of the Swiss nation today.

H. J. ACHARD.

Chicago, Ill.

IODINE AS A PREVENTIVE OF INFANTILE PARALYSIS

The New York Academy of Medicine recently held a symposium on infantile paralysis, which was quite extensively reported in *The Journal of the American Medical Association*. Doctor Flexner told us a lot of things that we already knew, as, for instance, that "epidemics of infantile paralysis always arise in warm weather," and "as yet no cure has been discovered."

In our study of the disease and a careful perusal of many recent reports and other literature on the subject, we note the close similarity between the bacillus of tetanus and that of acute poliomyelitis reported by Auregan, also the marked reduction of mortality in tetanus from the use of iodine-solution of from 60-percent to 31-percent strength.

Even with our limited knowledge of the thyroid secretion of iodine, we do know that a deficiency in thyroid secretion lowers systemic resistance to bacterial invasions. Then, this being true, would it not be a wise plan to increase the systemic resistance by supplying to the tissues sufficient iodine, in the proper form, not only to raise this resistance to normal, but even above normal for a short time, and thus fortify against the possibility of bacterial invasions.

I have many times proved the great value of iodine intravenously in pneumonia, catarrhal asthma, bronchitis, glandular infections, and tuberculous lesions. I have never as yet had the opportunity to try it in tetanus and infantile paralysis, but others have, and Auregan's report should stimulate us to a thorough trial of this remedy.

The laity has been "scared stiff" by scarehead newspaper reports and every day parents are beseeching their physicians for something to prevent the infection.

Theoretically, a soluble nonirritating prep-

aration of iodine given in moderately small doses once or twice a day should increase systemic resistance to the infection.

W. N. FOWLER.

Kalamazoo, Mich.

MORE ABOUT THE MOSQUITO-COUNTRY

In response to my letter published in *CLINICAL MEDICINE* for July, I received, from all over the United States, more than four hundred letters from doctors as well as a few



The man carrying the banner is a chicken thief. He is paraded around with a guard and band.

who are not doctors. Really, I did not expect such a deluge; but, I am glad that there is room for all of them.

Of course, it is impossible to answer all these letters individually, although many had enclosed stamps for a reply (the writers forgetting that U. S. postage stamps are useless here). But, right here I may state that some put only a 2-cent stamp on their letters, instead of a 5-cent one (the rate, for 1-2 ounce, for *foreign* countries in the postal union), and, as a consequence, I had to pay for each of these letters a fine of 18 cents—under the provisions of the Honduras postal laws—and these fines aggregated, \$39.60 for those letters that bore insufficient postage. For this reason I have been forced to leave some of the letters in the post-office. Still more probably will come to hand, but meantime I will here try to answer, to the best of my ability, most of the questions asked by my correspondents.

1. At least two steamers of the Vacaro line leave New Orleans for La Ceiba every week and make the voyage in three days. First-class passage is \$30.00.

2. The port of La Ceiba is a city of about 8000 inhabitants, rebuilt after the fire of 1914.

3. From La Ceiba, along the Mosquito Coast, to Brewers Lagoon is about 150 miles which, as a rule, I make in Carib crafts or coasting-schooners in from twenty-four hours,

with favorable winds, to three days, in calm or against contrary winds. When it promises to blow, I do not undertake the trip. From Brewers Lagoon to my place, it takes the Indians six days to paddle up the river. A motor boat can make it from my place to La Ceiba in twenty-four hours.

4. There are plenty of Americans in La Ceiba, mostly employees of Vacaro Brothers, who came here poor men, but who have amassed a fortune of many millions in the fruit-trade, all in about twelve years. But there also are scattered along the coast a few white men who failed to make fortunes, for the reason that they did not organize.

5. There are no white men on the Patuco River beside myself, and there is absolutely no chance to practice medicine. There are no ways of communication but the river. There are no roads or automobiles. When I leave the river, it is, to explore the country, and I have to cut my way through the tropical forest with the machete.

6. Snakes, I am told, are plentiful in Honduras, and I have killed two poisonous ones not far up the river. That I have not seen any in my region I can explain only by assuming that they must be few in numbers here. I protect boa constrictors, as a rule, for, they kill off rats, mice, and other noxious



A Carib village in the lower Mosquito Country

vermin. Yet, I have killed the biggest one I have seen—it measured 19 feet and 6 inches and weighed over 200 pounds. This one I considered a menace to the little black-eyed brown babies of our neighborhood.

7. I do not know the amount of rainfall for month and year, but it is so great that it keeps down the heat. I have never seen the thermometer register above 82°, and never below 74 degrees. Our elevation is about 400 feet above sea-level. The well-water is good and may be had at a small depth.

8. I do not know why there is so little malaria here, even along the lower part of the

Patuco River, where the anopheles is plentiful, unless, I explain it by the probable absence of plasmodia in the water of the swamps, for the reason that this is continually renewed by the abundant rains. There are but very few mosquitos in my region, and none at all higher up in the country.

9. There abound big trees, these in some parts being of commercial value and in others not, while everywhere the underbrush and jungle are dense. A company, an English concern, had obtained from the government the concession to cut mahogany trees, for a consideration of \$33,000; however, it could not meet the payments, owing to the war, and, so, forfeited its charter.

10. The government protects its colonists, who have never been troubled by revolutionists in those parts of Honduras where revolutions do occur. The Mosquitia, however, has been free from revolutionary disturbances, owing both to the ignorance and the peaceful nature of the Indians of those regions.

11. It is a matter of indifference to me what may be the creed of any missionary sent down here, so long as he is a good Christian and is duly authorized by his denomination.

12. There are growing wild here several varieties of cacao-trees, and they furnish a very good chocolate for home use; but their market value is relatively low.

The best variety of cacao known is that which goes by the name of *locumisco*. This is cultivated in the state of Chiapas Mexico, in the region of Pichualco where Doctor Gray lives. Imported and planted here, it will come true to name. To clear the land, import and plant in the nursery and then set out the plants, and planting the shade trees will cost about \$100 per acre. About 250 trees go to the acre, and these, after five years, average about 1 pound to the tree.

Fifteen years ago, cacao-beans were worth 15 cents per pound. Since then, Germany has planted a tremendous number in Africa, as also have the Portuguese, the English in East India and Ceylon, the Americans in Hawaii and other places, and Venezuela, Brazil, and other countries have done the same, and, for all that, the price of cacao-beans has steadily gone up, reaching 40 cents a pound before the war; and this without any artificial booming.

The fact that the German government now gives chocolate to its soldiers instead of coffee or beer, naming as a reason the superior food value and sustaining qualities of the cacao,

will enhance its price still more after the war is over.

The yield of cacao steadily increases, year by year, until it reaches 6 or 8 pounds per tree yearly. But let me warn you not to believe those exaggerated, interested reports about a yield of 20 pounds or more per tree.

13. The "wild hog" I mentioned is not a hog at all, properly speaking. However, there are three varieties of the peccary—its correct name. Still, domestic hogs do very well here. Cows can be bought cheap; they are not very good as milkers, though.

The chief article of food for the Indian are bananas and plantains (the latter the large green cooking-bananas), both of which grow wild. The Indian cultivates, besides, in a desultory way, rice, manioca (utilissima,) and sugar-cane. From the latter he makes what they call *chicha*, upon which to get drunk.

I have panted three classes of yam—*dioscorea bulbifera*, *aculata*, and *alata*—which produce potato-like roots sometimes weighing as much as 32 pounds each. *Caladium esculentum* in the United States called elephant's-ear, produces a very fine edible bulb, and I have planted plenty of it.

I also have planted *artocarpus incisa*, commonly known as breadfruit.

Corn can be planted every day of the 365 that make the year. Sweet-potatoes do well. Irish potatoes I have not tried, yet, many kinds of vegetables do splendidly.

Oranges, grapefruit, lemon, avocados (alligator-pears), mangos, and, I think, grapes also and perhaps strawberries may be grown here. And you never have tasted pineapples such as grow here.

14. Now about coming down here to locate. I would suggest that as many as can manage should come together. We all have confidence in *THE AMERICAN JOURNAL OF CLINICAL MEDICINE*. Why not make that our medium and organize for investigation, under the leadership of one of the journal's staff?

I am very anxious now, after receiving so many letters, to make good. If we organize, it can be done very cheaply. Remember above all, I am for the poor doctor. Of course, we shall need all manner of men, rich as well as poor, only we do not want the rich man to become a menace to those of little means, by his taking labor away from the latter, through offering bigger wages, or otherwise taking undue advantage. Let us be brothers and all work together, and I know the enterprise will be a good thing for all.

I think I can manage to get land at the rate of \$60 for every 100 acres (or 60 cents an acre), and I will promise to plant the first year 10 acres with cacao for \$700, of which \$600 will be for my work, while \$100 will go toward planting 250 acres with cacao, the proceeds from which must go to the establishment and maintenance of a "preparatory college and agricultural school."

Remember, also, that this still is a wild country. Many a time I have had to do without coffee, flour, sugar, and other such articles, as I am so far away from all communication. Luxuries or comforts must be produced before we deserve them. But everything needful can be raised here in a very short time and with the greatest of ease.

Also remember that I am out of the world only because I am alone—the only white person here—and that sometimes I do not get any mail in two or three months. But, a colony of a hundred or more can have mail-delivery every week, for then motor boats will bring it up.

With the fine woods we have here in abundance, we can make our own furniture; and, then, with a hospital, a church and a school, we shall be as well off or, rather, better, than in civilized centers.

After all, brother, man's happiness consists in making those whom you love happy; and I—well, I, perhaps, may know a little happiness again in the contemplation of the good done in my declining years, God having seen fit to take from me, all my loved ones, leaving only an immense void, an unceasing ache. May this be the answer to those who have asked me why I am planning this undertaking.

15. As to what to bring, I would suggest a "gold-medal" camp-cot and mosquito-netting, as the journey is made through regions where mosquitos are plentiful; although further up the river there are not many. Waterproof coats and rubber shoes may come in handy. A small cooking-outfit for campers (there are several makes) will prove very useful. But remember not to bring along an alcohol or gasolin stove, for they are useless. We burn wood, which is plentiful.

I have a 22-caliber high-power rifle, but never use it, my 32-20 Winchester being all I need. With the smokeless powder and soft-nosed bullet it kills alligators, tigers, mountain-lions, and tapir, while the black-powder cartridge is good for deer and smaller game. The Winchester or Marlin repeating shotgun is no good here, for the paper shells swell

from the atmospheric moisture, and reloaded brass shells also clog the breach. A double-barreled gun, preferably a 16-gauge, and brass shells is what we use here, and it has proven the most satisfactory. Jaguars and tapir are killed with it constantly. If you like fishing, bring along your rod and things.

16. Jaguars, lions, and peccaries do not come near the camps, and there is no danger for children. They are not as fierce as I found them in Mexico, owing probably to the fact that they have plenty of wild animals to feed upon.

17. I call the Indians "my Indians," because they serve me better than they do other people; for they love me. When money gave out, they even worked for me; yes, and they went hungry, too, for me and almost naked, as we could get no clothes. That is why I love these dusky children of nature—and they are "my" Indians, and I am their friend.

Now, to close, I beg that you will let me know when you will come, so that I may arrange passage for you from New Orleans and meet you at La Ceiba with a boat, to take you up the coast.

Letters for me should be addressed as follows: A. R. Hollman, care of Laffite, Alvarez y Cia., La Ceiba, Spanish Honduras, C. A.

A. R. HOLLMAN.

La Ceiba, Honduras.

INFLUENCE OF THE OVARIAN SECRETION UPON THE BLOOD

Animal-experiments conducted by F. Picone, of Rome (*Riv. Osped.*; cf. *Muench Med. Woch.*), convince him that the anemia following extirpation of the ovaries results because the internal secretion of these glands has some physiologic connection with the constitution of the blood. This secretion, he assumes, directly stimulates the erythro- and the leukopoietic organs, augmentation of the hemoglobin and increased resistance of the erythrocytes.

Another investigator, G. Antonelli, of Rome (*Il Policlin.*; cf. *M. M. W.*, *loc. cit.*), using young, sexually mature bitches, enumerated the following blood changes observed after ovariectomy: marked diminution of the erythrocytes and of hemoglobin; slight increase of the blood-cells with the *substantia granulofilamentosa*; lessened resistance of blood-cells; occasionally a certain degree of leukopenia or also a lymphocytosis or a relative mononucleosis.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by *GEORGE F. BUTLER, A. M., M. D.*

Consideration of the body in health is one thing; of the body sick, another. The "water-cure" is as old as the use of drugs. It has competed with drugs and is now competing with vaccine- and serum-therapy; or, it may be regarded as a supplementary treatment. Less is known about the action of the bath than would be supposed.

Much knowledge thought to have been acquired long ago is now repudiated. Here is a candid bacteriologist confessing that, although he has been engaged all his life in studying diseases and their treatment, he continues to "have more failures than successes." The effects and consequences of the apparently simple "act of applying water to the skin" seem to be as much of a mystery as is bacteriology.

Happily, it does seem settled that some bathing is wholesome. Whatever the operation, so much is fairly assumed. For a person in health, the "act of applying water to the skin" is believed to be good for something besides removing dirt. The conclusion accords with a general understanding. Many triumphs of physiological science seem to verify flatteringly the common instincts developed from our pliocene beginnings.

Senator Bailey, in opposing the establishment of a children's bureau by the federal government, is alleged to have asked whether we wanted to bring children down to the level of hogs. Quickly came the retort: "No, we wish to bring them *up* to the level of hogs."

Disease is ever with us. It cannot be prevented entirely, probably. For this reason, all the attention that can be given to curing disease is time and effort well spent. But, because we cannot reach perfection, is no reason why we should not have perfection as our goal. Where prevention is impossible, we call upon cure. When cure is impossible, we die. The starting-point is prevention.

In connection with the International Congress of Hygiene and Demography held at Washington, the American Federation of Sex Hygiene made a striking exhibit of the

annual waste and loss from the substance of the people due to indulgence in vice and luxury. The object of the federation was, to disseminate knowledge and sound opinion on the sexual relation and of the enormous injury to health and contribution to mortality from its abuse.

An estimate of the money-cost of the social evil is put at the appalling sum of \$3,000,000,000 a year—which is worse than wasted. There can be no statistics or accurate knowledge on this subject, but those who have made a study of it believe this to be an underestimate rather than overstatement; and it takes no account of the loss from impaired efficiency or actual withdrawal from productive occupation.

Other items are placed in conjunction with this for comparison, and they further illustrate the squandering of the products of labor, and the means of subsistence, upon indulgences that are injurious rather than beneficial to health and strength and to the genuine comfort of living.

The amount of money spent upon intoxicating liquors is put at \$2,000,000,000 yearly—and that spent upon tobacco, at \$1,200,000,000. There must be considerable uncertainty about these sums, and a distinction is to be made in both cases between comparative abstinence, moderate indulgence, and excess; but there is no doubt that a large proportion of this expenditure is productive of injury and results in the waste of much that might contribute to better living and augmented wellbeing, while the capital and labor bestowed upon producing the materials for harmful or useless indulgence could be applied to making the necessities and comforts of life more abundant and less costly.

Other items are given, such as \$800,000,000 for jewelry and plate, \$500,000,000 for automobiles and \$200,000,000 for confectionery; but these serve rather the purpose of contrast than of comparison for teaching the same lesson. There are many expenses for pleasures and gratifications of taste, which not only are harmless in their effect, but are proper concomitants of civilized life and re

wards for reasonably directed effort. A more striking contrast is that with \$250,000,000 expended upon churchwork and \$12,000,000 for foreign missions.

The kind of waste and loss incurred in actually vicious indulgence and in luxury that has no rational excuse may well be seriously taken into account in considering complaints of the high and increasing cost of living. It has much to do with the poverty, misery, and suffering of the world, and the hardships of those who have to be content with scanty comfort or the bare necessities of life.

Judging from reports of government statisticians, there are seasons of the year when certain diseases are less likely to be fatal than at others. From observations made, they say that the months when the leading complaints most prevail and those during which they are least prevalent, with the maximum and minimum number of deaths in the territory covered in the investigation, are as follows:

Typhoid fever, September, 1197 deaths, and May, 578 deaths; measles, March, 1107, and October, 79; scarlet-fever, March, 760, and September, 241; whooping-cough, August, 720, and October, 353; diphtheria and croup, November, 1343, and July, 640; tuberculosis of the lungs, March, 7700, and September, 5488; pneumonia, March, 7606, and August, 1554; bronchopneumonia, March, 3229, and August, 946; diarrhea and enteritis (in children under 2 years of age), July and August, 12,535 and 12,565, respectively, and February, 1337.

As the observations covered nearly three-fourths of the population of the country, they ought to be of value to heads of families, and others who are well aware of the periods when the most of diseases are prevalent.

In many instances, the proverbial ounce of prevention will do much to obviate sad results. And, the figures presented by the government experts, therefore, are worthy of the careful consideration of all.

Despite everything that has been done and is being done toward the prevention and cure of disease, it is worth while to observe the radical divergence of sentiment and opinion among the eminent scientists of the world. It is a very ancient proverb that asks, "Who shall decide when doctors disagree?" And, indeed, in spite of all the advances that have been made in medical science, we must admit that physicians are far from agreement regarding many important medical matters.

It is for this reason that, at the present time, I am not in favor of a department of health of the federal government. If medicine were, or showed any likelihood even to become, an exact science, there could be no valid objection to such a department; but, as long as it remains split into so many different, and sometimes intolerant, sects, it would be as fair and reasonable to create a department of religion, and to give the sanction of governmental endorsement to some one of the sects into which the religious world is divided.

It is time for a broader catholicity and absence of the bigotry and rancor that once characterized adherents of the medical sects or "schools" of the present day. The same liberal tendency is increasingly visible among the religious sects. But, even in these matters of medicine and religion, we have not as yet reached the millennial stage. It is true, however that our controversies are conducted now with a gratifying absence of the rancor that once was inseparable from them.

We can now discuss points in controversy without losing our tempers and declaring that those who disagree with us must be, necessarily, fools and charlatans. But, as is only natural, we still give the preference to those who agree with us and mentally dismiss those who hold to differing ideas as deficient in education or in their reasoning-powers if they have not been deflected from orthodoxy by the lure of pecuniary advantage.

If we had a department of medicine or of the public health, it is inevitable that the secretary would appoint as his subordinates those only who agreed with his own opinions—and thus an official standard of medical orthodoxy would be established. It might be to the interest of the public health that such an official standard should be set up and maintained, but it would be certain to excite much jealousy and dissatisfaction among those whose ideas were regarded as heterodox.

That there might be some gain alike in economy and efficiency by combining all the medical branches of the government under a single head may be true, although that has not been demonstrated; but the chief objection is, that it would, necessarily, establish a standard of medical orthodoxy and create a discrimination against all other schools. And, as for me, I am not yet prepared to admit that we regulars possess all the medical knowledge there is or that any few men in our ranks know it all. It is better to work independently as we are doing, each worker

contributing to the general fund of knowledge what he thinks of value—and thus the truth will ultimately prevail.

During September 11 to 17 the fifth annual convention of the American Association for the Study of Spondylotherapy met in Chicago, and there was a large attendance. This occasion has prompted a line of thought that I will attempt to elaborate in this month's contribution.

Great advances have been made in the sciences on which the superstructure of medicine rests, notably physiology, pathology, and physics. There have been great strides in all these branches, yet, I believe that less attention has been paid to physiology than to pathology—an unfortunate fact. I believe that medical schools are making a mistake in not devoting more time to the fundamentals of medicine—the foundations upon which the whole superstructure rests—namely, anatomy, physiology, and chemistry. How precious little the average physician does know about the anatomy and physiology of the nervous system!

Medicine, both as a science and as an art, is an organism, the branches of which, like those of the nervous system after leaving the common stem, appear to start away from each other, and finally get lost as the distance increases. The special studies which lead into the investigation of seemingly narrow paths and byways, and the specialistic practices which obscure the general view, while throwing concentrated light on a special point, may appear to contract the scientific conscience and to rend the body medical into dissevered splinters. But this, really, is not so. The more familiar we have become with these "narrow paths and byways," the more useful has medicine become.

To specialistic labor, we owe the fact that many branches of science that formerly had no contact with conservative, or so-called "scientific", medicine are now recognized as valuable, intrinsic parts. Hydrotherapy, electrotherapy, mechanotherapy, and psychotherapy are illustrations.

The once quack "water-cure" doctor, the "electric" doctor, and, more recently Christian Science practitioners, Osteopaths, Chiropractics, and all that ilk, have, perhaps, been more of a help to modern medicine than a hindrance. Surely, a help when medical men have been broad enough to take what good they had, while discarding the useless and harmful.

Now, spondylotherapy, it seems to me, is based upon sound scientific principles. We, many of us, are not enough familiar with the functions of the spinal nerves and their influence for good or ill on the rest of the human organism.

We know that, if a hidden cause of pain, for instance, be in any one particular spot, it is only by tracing the nerves of and from that spot that we can hope to arrive logically at the real cause of the symptoms, and so divest the cause of its obscurity.

Now, external pain, or pain upon the surface of the body, if properly appreciated, may be considered as an external sign of some distant derangement. If the pain persists—if it does not depend upon any transient cause—it becomes necessary to seek the precise localization of the pain; then, as soon as we recognize the precise position of the pain, we are enabled, by a knowledge of the distribution of the nerve or nerves of that part, to arrive at once at the only rational suggestion as to what nerve is the exponent of the symptom. By following centripetally the course of that nerve and bearing in mind its relation to surrounding structures, we shall, in all probability, be able to reach the original, the producing cause of the pain, and, consequently, to formulate a correct diagnosis.

Patients judge of the position of their own disease, most frequently, by the situation of the most prominent painful symptoms or those most obvious to their senses; while we physicians, relying upon our knowledge of the true cause of the symptoms, judge of the seat of the disease by a just interpretation of the symptoms through the medium of normal anatomy. We know by experience that such symptoms may manifest themselves at a spot far removed from the actual seat of the disease.

Thus, if, for instance, we trace internally the great splanchnic nerve from within the thorax downward and find it connected at its abdominal end with the solar plexus, thence trace its distribution to the stomach, duodenum, liver, and pancreas; and, if we follow the other, or upper, end of the same great splanchnic upward to the fourth, fifth, and sixth dorsal nerves, which emit peripheral sensory filaments to the integuments, over the angles of the scapulæ, to the interscapular spaces and the adjoining skin, we can well imagine (without going into how the transmission is made) that these nerves, carrying the influence upward and backward, may explain the occur

rence of the pains sometimes experienced in those external parts associated with a disturbance of abdominal viscera.

"The subject of spinal therapeutics," says Abrams, "has received less attention from the medical profession than it deserves. Even the laity know that cold applied to the back of the neck may arrest hemorrhage from the nose and that heat applied to the small of the back may hasten menstruation. The profound and farreaching physiologic truths which underlie these simple phenomena have either been ignored or only been given inconsiderable attention."

But I must not attempt to go into the subject of spondylotherapy. That is a task for Doctor Abrams and those who know more about that subject than I do. I wish to remind the reader, however, that hitherto the advancement of medical science has been brought about mainly by individual effort. The value of such work in the past I in no way underrate, nor do I desire to lessen the amount of it in the future; but, in medical science, there is much that defies interpretation from individual experience, and many a problem so farreaching in an ever widening field, with elements so manifold that no single man, however gifted and longlived, can hope to bring the whole within his range.

The need, therefore, in medicine of that combination and concentration of individual work as is adopted in many other branches of science and in commerce, and to which increasing facilities of intercommunication have given so much impulse, and so much strength, can not be questioned. Indeed, it may be said that, resting on individual research alone, medical knowledge can be advanced but slowly and with difficulty. Future progress to any great extent must be the work, not of units acting disconnectedly, but of the collective force of many acting as one. But for many to act as one, organization is needed.

I look upon these meetings for the study of spondylotherapy as a manifestation of a great movement. However, it will be great and reflect credit upon the medical profession only as this movement is kept clean. Quackery and the jealous and mercenary spirit of a commercial era must not enter into the ranks of a scientific and ethical brotherhood.

There is no room for spondylotherapy as a separate "school" or "cult" of medicine. It only should constitute a part of scientific medicine and be employed for diagnosis and treatment when and where it can profitably

be made use of to the best advantage. Under no circumstance, should it be practiced as an exclusive means of cure or exploited as a cureall.

One cannot fool all the people all the time, even if he should try. There has been abroad in the land altogether too much medical sectarianism and arrant quackery, and too much dilettantism among our well-clad and well-fed half-instructed but uncultured and mentally unbalanced classes. But, if there is any science or art in which the dilettantism, both of the narrow specialist and of the busybody lay adviser, is detrimental, it is in medicine. We have been told that "a little learning is a dangerous thing." That is a mistake. It is not learning that is dangerous. It is ignorance that harms.

Hence, we should learn all that it is possible for us to learn about this subject, and of any other that will enable us to get a firmer hold upon, and a larger insight into, medical science. We should not be deterred from a liberal-minded seeking for truth by the ultra-scientific doctor who can see nothing of value in any thing that is new. Every good thing that we have in medicine at one time was new to it.

Let me urge those who are interested in the study of spondylotherapy not to become narrow and dogmatic. Let them be liberal, broadminded; let them work hand in hand with laborers in other fields of medicine.

In the natural order of evolutionary processes, the principle of synthesis has its due and ordered time and place. In America, one would be shocked, at first impression, to be told that he had employed such methods; but, in the last analysis, what is mental suggestion or the administration of placebos? And who has not employed them?

Remembering the function of our profession to be the prevention and cure of disease and the relief of suffering, and remembering that no two cases of disease in the whole history of the medical profession have presented identical conditions, it is monstrous for any man or set of men to forbid the use of any method, any instrument, any remedy or any treatment that in the opinion of the attending physician promises success.

In the medical profession, as in religion or science, the perils of dominating influence cannot be escaped. While the evils flowing from industrial concentration can be met, the evils that must follow the syndication of intelligence can not be avoided.

(To be continued)

Among the Books

VON RUCK: "IMMUNIZATION AGAINST TUBERCULOSIS"

Studies in Immunization Against Tuberculosis. By Karl von Ruck, M. D., and Silvio von Ruck, M. D. New York. Paul B. Hoeber. 1916. Price \$4.00.

This handsome volume of 421 pages of text presents the results of many years of investigation, which was undertaken more particularly with a view of developing a successful treatment of tuberculous disease, along the lines originated by Koch with his old tuberculin. Not only this, however, but for many years the authors have felt that it must be possible to produce a specific immunity against the pathogenic action of the bacillus of tuberculosis, in the animal and human organism, as it is secured against the virus of smallpox, and it is more especially in this direction that the researches of the senior author were made, since the beginning of this century.

It will be remembered that Dr. Karl von Ruck announced the completion of his related studies, in 1912, and that an investigation of his method, by the U. S. Public Health Service failed to produce satisfactory results. The causes of this failure cannot be discussed here; they have been considered, at least in part, in this volume. Suffice it to say that, in contrast to the unfavorable results in the Hygienic Laboratory at Washington, the workers in the laboratory of Sir Almroth E. Wright, in Saint Mary's Hospital, London, succeeded in demonstrating the possibility of immunizing persons against the tubercle bacillus, and of producing antituberculous substances in the blood of the treated persons. The results of this work were published in the *Medical Record* for July 22, and form the subject of *Senate Document* No. 453, published by the Government Printing Office, Washington, 1916.

Even if confirmation of Doctor von Ruck's method had not been afforded by independent investigations, his book under consideration would deserve the attention of tuberculosis physicians and of all physicians who are interested in the prevention and treatment of this formidable disease, for the reason that,

for many years, he has been one of the foremost tuberculosis physicians in the United States and that he has not only been very successful in the treatment of tuberculosis, but also has rendered unstinted aid to scores of other physicians who put themselves under his guidance. The teachings of an investigator who is at the same time an experienced clinician and research worker may confidently be expected to be of value.

The volume contains three parts, the first of which is devoted to the theoretical consideration of the problems of immunity, in a form in which the general practitioner can understand and appropriate them for his practical work. It is to be taken into consideration, however, that these problems can never be explained in so simple a manner that they ever can become easy reading. But the study of medicine is not expected to be easy; it requires thought, application and concentration. Still, a careful study of the first part of this book will make many points clear that may have remained obscure hitherto. The second part deals with the subject of practical immunization against tuberculosis, and reports the results of the authors in the immunization, both prophylactic and therapeutic, of children and adults. In this part the study of individual cases, their diagnosis, selection for treatment, and the mode of the latter are discussed in great detail, and it is here that the remarkably wide clinical experience of the authors enables them to be of particular service to physicians.

In Part III, an account is given of some experimental studies in the immunization against tuberculosis, including the history of Doctor von Ruck's vaccine. It is shown here that animal experimentation very often may be hampered seriously by the fact that the experiment animals are not suitable, and that in consequence the results must be misleading. It is also shown that it is quite possible to immunize normal animals in such a manner that they will resist a virulent infection with tubercle bacilli; and, finally, the last chapter is given over to an experiment which was made with a large number of guinea pigs that had acquired spontaneous or stable infection with tubercle bacilli, and,

for this reason, presented, more than is commonly the case, conditions which simulate those found in tuberculous persons. In the opinion of the reviewer, the last chapter is of very great importance in so far as, ordinarily, animals with experimental tuberculosis do not imitate practical and actual conditions, and that in this experiment these actual conditions existed. The fact that it was possible to treat some of these tuberculous guinea-pigs successfully by means of a tubercle bacillus preparation containing all potent substances of the bacillus, vindicates and justifies the employment of this preparation in human practice.

It is impossible to enter into most of the important discussions in the book before us. The reviewer will make the attempt to do so in a special article next month. He feels certain, however, that a careful and persistent study of this volume will be of great assistance to the tuberculosis physician, and that it will enable him to treat his patients the better.

LOVETT: "INFANTILE PARALYSIS"

The Treatment of Infantile Paralysis. By Robert W. Lovett. With 113 illustrations. Philadelphia: P. Blakiston's Son & Co. 1916. Price \$1.75, postpaid.

This book is written for the purpose of collecting and presenting the results of recent studies in the treatment of infantile paralysis. It contains a practical, plain and, perhaps, rather elementary statement of the various therapeutic measures which the author believes to be the soundest and best.

The work is a timely one, in view of the prevailing epidemic of the disease in New York and elsewhere. The author is well fitted, through his large experience, to write upon the subject, and his offering to the practitioner will prove the more acceptable, as it contains the practical results and ripe experience of an active pediatricist whose clinical work in conservative surgery and orthopedics is well known.

As indicated by the title, the book deals almost entirely with the treatment of infantile paralysis, taking up in succession the management of the acute phase, of the convalescent stage, and of the chronic phase of the disease. The subject of muscle-training, which is such an important therapeutic measure during the first two years, before operative treatment may be undertaken, has devoted to it a special chapter, commensurate with its importance. We believe that this little work will prove of

valuable assistance to the practitioner in his management of this important disease.

PROGRESSIVE MEDICINE

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in The Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D. Assisted by Leighton F. Appleman, M. D. Philadelphia. Lea & Febiger. Six Dollars per annum. June 1, 1916, Vol. 19, No. 2, and September 1, 1916, Vol. 19, No. 3.

The principal subjects treated in these two numbers of "Progressive Medicine" are Hernia, by William B. Coley; Surgery of the Abdomen, Exclusive of Hernia, by John C. A. Gerster; Diseases of the Blood. Diathetic and Metabolic Diseases. Diseases of the Thyroid Gland, Spleen, Nutrition, and the Lymphatic System, by Alfred Stengel. Diseases of the Thorax and Its Viscera, including the heart, lungs, and blood vessels, by William Evert; Dermatology and Syphilis, by William S. Gottheil. Obstetrics has been treated by Edward E. Davis.

PERDUE: "PELLAGRA"

Pellagra. Part I.—Translated from the Italian monograph of Professors Giulio Alessandrini and Alberto Scala, by E. M. Perdue, A. M., M. D., D. P. H. Part II.—Pellagra in the United States. By E. M. Perdue. Burton Publishing Company, Kansas City, Mo. 1916.

The first part of this volume contains the results of the researches undertaken by Professors Alessandrini and Scala of the Institute of Experimental Hygiene of the University of Rome. Concluding an account of these studies, the authors assert that pellagra is a disease caused by forced retention of mineral salts, to which succeeds an excessive liberation of acids, with respect to what is considered as normal for the determinate organism, or pellagra is none other than a mineral acidosis with all its consequences.

In Part II, Doctor Perdue presents a detailed study of the geographical distribution of pellagra in the United States, together with an investigation of soil conditions, particularly in those parts of the country where the disease is endemic. He finds, in agreement with the Italian investigators, that pellagra is a chronic acid intoxication caused by colloidal silica in the water supply; that the disease is strictly localized and contracted in those

regions where the water supply is derived from clay soils.

In accordance with this view, the prevention of pellagra consists in providing a drinking water of the proper alkalinity, and the rational treatment of the disease follows the classical lines of the treatment of all mineral intoxications. It requires: 1, an antidote to the poison; 2, the elimination of the poison already in the system; 3, building up the depleted organism; 4, symptomatic treatment of the manifestations.

It will be seen that this study of pellagra does not agree with the more recent results of the investigations undertaken in the New York Postgraduate Hospital, and that the question of infectiousness is negated rather than supported. In our opinion, neither of the prevailing theories can lay claim to having presented a final solution of the problem, and we have to await further studies before we can hope to understand this obscure disease sufficiently.

"THE MEDICAL CLINICS OF CHICAGO"

In the July number of *The Medical Clinics of Chicago* before us, the use of digitalis is discussed by Doctor Arthur R. Edwards, while in Doctor Tice's clinic the subject of diabetes is considered, and the same subject received attention in Doctor Strouse's clinic, particularly with reference to surgery and pregnancy. There is a talk, by Doctor Portis, on vomiting, and one, by Doctor Abt, on feeding the normal baby. These are only a few of the many instructive cases presented in this number. Published bimonthly by The W. B. Saunders Company of Philadelphia. Price per year, \$8.00.

MODELAND: "THE EXPECTANT MOTHER"

The Expectant Mother and Her Child. By Margaret J. Modeland. With an introduction by Harold A. Miller, M. D. Philadelphia: The John C. Winston Company. 1915. Price \$1.00, net.

It is with genuine pleasure that we can recommend this little book to every physician, for his own information as well as for that of his obstetric clients. The book contains in a nutshell answers for all the multiplicity of questions likely to be asked by expectant and by actual mothers, concerning themselves and their babies. A great advantage of the book is that the author, who is a trained nurse, very successfully has avoided to write

a learned treatise, but has told her story in such simple language as may be understood by "folks." Brief as it is, the information will be sufficient in most instances; where it may not give certain circumstances, it will help the young mother to formulate her further questions addressed to physician and nurse.

Strangely enough, very few good books on this important subject are available, while we constantly are in receipt of requests from physicians for just this kind of information. Miss Modeland has done a real service to physicians, nurses, and mothers.

HAWORTH: "NITRO BY HYPO"

Nitro by Hipo: A Pep-tonized Tonic for the Physician. By Edwin P. Haworth. Kansas City: The Willow Magazine Company. 1915.

It is difficult to surmise the reason for the title bestowed upon this book. It might better have been called just "Common Sense" or "Horse Sense." Anyway, it is a reproduction of various articles and paragraphs that have appeared in *The Willow Magazine*, and which have given courage and inspiration to many. The main merit of the separate talks lies in their brevity. You can read one of them in five minutes and then have enough to think about for twenty-four hours. Short, sharp, concise—a regular "alkaloidal pocket-case" of good, plain sense and truth, driven home with a vim. This is a good book. Read it and keep on reading it, doctor, and then read it some more. And, incidentally, take it to heart and *live* it.

MACNAMARA: "INSTINCT AND INTELLIGENCE"

Instinct and Intelligence. By N. C. Macnamara. The Oxford University Press: 1915. Price \$2.00.

Education does not mean merely the development and training of the intellect, that is, the ability to reason from experiences and to regulate one's actions accordingly, but it includes the training of the instinctive disposition, or character. The problem of what we generally designate as instinct not only is interesting, but a most important one, and the author devotes a considerable portion of his argument to the discussion of this inherited peculiarity of living beings and then applies the results of his studies to the practical questions of education.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

· QUERY 6243.—“The Forchheimer Treatment of Exophthalmic Goiter.” R. E. G., Ontario, Canada, desires to know how long the Forchheimer treatment of exophthalmic goiter should be continued before one may expect definite signs of improvement.

For the sake of completeness, I will cite from Forchheimer's work on “The Prophylaxis and Treatment of Internal Diseases” (New York, 1910, p. 465). He says that his favorite method of treatment, which he has employed for over twenty-five years, consists of the continuous use of quinine hydrobromate, with ergotin. This salt was chosen because it is better borne by patients than the other salts—i. e., cinchonism is not produced so easily. His experience has been very extensive in the use of this drug.

Quinine hydrobromate is given in doses of 0.3 Gm. (grs. 5), in gelatin-coated pills, four times daily; to each pill is added ergotin, 0.065 Gm. (gr. 1), when the quinine alone does not give results in forty-eight hours. As these pills may have to be given for a length of time, the author adds that he has never seen any bad permanent effects follow their administration; one of his early patients took four of these pills daily for nearly three years without detriment to herself.

The effects of this treatment are as follows: first the tachycardia disappears, then the thyroid gland diminishes, and finally the tremor and the exophthalmos. The first change usually takes place after the treatment has been used for forty-eight hours; it should then be continued until all the symptoms have disappeared; in the fully developed cases this has been in as short a time as four months and as long a time as three years.

On account of the general condition—the extreme nervousness of the patient, for instance, or the state of the heart—it frequently becomes necessary to supplement this method by the Weir Mitchell treatment.

This covers the essence of the case. I wish to add, however, that it is important that all functions of the patient should receive very careful attention. It is particularly important that the alimentary canal be cared for with the utmost scrupulousness. The lower bowel should be washed out with enemas, and regularity should be secured with proper remedies, especially if there is any tendency toward sluggishness. The mineral-oil treatment (I like Petrochondrin) is particularly well adapted to these cases.

If there is fecal toxemia, the use of the sulphocarbolates or Galactenzyme, or both, will be found of exceeding value. The heart action can be steadied by the use of a good digitalis preparation, or, if the case is not too pronounced, with cactus. Bram, in a recent article recommended lecithin as a nutritive tonic, and Neuro-Lecithin will naturally commend itself.

Of course, there are cases which will not yield to the Forchheimer treatment—cases so far advanced and in which the symptoms are so pronounced that, as a rule, surgical intervention may be necessary. I confess, however, that I am not keen for surgery in goiter, since these patients are poor subjects for operative work.

Recently Watson of Oklahoma City has advised a method of treatment with quinine and urea hydrochloride in 50 percent solution. The treatment promises well, and has given excellent results, but it must be used with caution. For details, see Watson's article in *The Journal of the American Medical Association* (Sept. 25, 1915).

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QUERY 6244.—“Anociassociation-Anesthesia.” A. C. C., Oklahoma, desires to be informed as to just what is anociassociation.

Anociassociation is a term introduced by Dr. George W. Crile, of Cleveland, and anociassociation-anesthesia is a method, elaborated

by him, calculated to eliminate surgical shock altogether.

According to Crile, the actual operative interference and the associated handling of organs are, by no means, the only factors that contribute to the production of surgical shock. Crile maintains that this condition is, in great part, of psychic origin and also that it is aggravated by irritation of the nerves.

The psychic disturbances of the patient he avoids by establishing pleasant and reassuring conditions before undertaking the operation. He allays fear of the operation and of the anesthetic by administering a narcotic (morphine and scopolamine) several hours before inducing the general anesthesia. For the latter purpose, his favorite agent is nitrous-oxide-oxygen, which, he maintains, is the safest anesthetic in the hands of the experienced anesthetist; although it is the least safe if employed by inexperienced persons.

In order to prevent shock to the sensitive tissues, including the nerves leading from the field of operation, novocain is employed, as a matter of routine, in all cases. No tissues are divided that have not first been completely infiltrated with this anesthetic. Sometimes Doctor Crile uses quinine and urea hydrochloride.

As for the rest, Crile insists upon the importance of gentle manipulation throughout the operation, and of sharp, cleancut dissection. By these means, it has been found possible, in the Lakeside Hospital (Cleveland), to reduce operative shock to a minimum, and, in consequence, to improve surgical results materially.

Doctor Crile has recently written a book on the subject, in conjunction with Dr. W. E. Lower. It is published by The W. B. Saunders Company, of Philadelphia, and sells for \$3.00.

Anociassociation is well worth studying. Incidentally, you may have observed that it is carried out, in a way, under the H-M-C narcosis, which we have advocated for a number of years as an introduction to general anesthesia.

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QUERY 6245.—"Follicular Conjunctivitis." P. S., Virginia, is treating a case of granulated eyelids in the person of a young man who wishes to join the navy and is physically all right in every other way. He desires to obtain a prompt cure.

First of all, irrigate the patient's eyes thoroughly, three times daily, with a solution of zinc sulphocarbolate and boric acid—2 and 10 grains, respectively, to the ounce.

Bear in mind that follicular conjunctivitis

can hardly be regarded as a pathological entity. A granular condition of the lower lids not infrequently is observed in individuals who have been exposed to much dust. Occasionally the diplobacillus and other pathogenic organisms are found in persons who rub their eyes with dirty hands.

A careful bacteriological examination should be made in every intractable case. If pneumococci or the Koch-Weeks' bacillus are present, a 33-percent solution of protargol should be instilled carefully once a day, and a 5-percent solution similarly used three or four times daily.

The zinc-salts prove most efficient in diplobacillary infections. Many authorities recommend solution of zinc sulphate of the strength of from 1 to 1.25 percent. When no organisms are present, the application of yellow oxide of mercury ointment usually will cure the disease rapidly.

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QUERY 6246.—"Hepatic Engorgement in Powder-Plant Employees." J. C., New Jersey, asks if we can suggest an effective treatment for yellow atrophy of the liver or the engorged liver such as occurs in acute yellow atrophy. Our correspondent treats a large number of men that work in powder-plants, and this condition seems to be prevalent among such workers, who are compelled to inhale the dust and gas incident to their occupation.

Of course, it is difficult for us to outline an intelligent treatment, without having a clearer idea, of the conditions which obtain in these individuals, the nature of the poison, and, the immediate surroundings.

There is some histological difference between fatty degeneration and acute yellow atrophy of the liver, the latter condition resulting, frequently, from the toxic action of phosphorus, arsenic, and other substances that induce rapid fatty degeneration and cell destruction.

Mild cases present few symptoms of diagnostic import, though there may be some pain or uneasiness in the right hypochondrium, slight jaundice, hemorrhage, and grave cerebral phenomena. Microscopically, the liver is much reduced in size, weighing but 15 or 20 ounces. A primary enlargement may occur. Microscopic examination also reveals destruction of the hepatic cells, disappearance of the nuclei, and the presence in the cell-wall of fat globules containing free pigment.

Nervous shock, mental worry, syphilis, certain acute fevers (typhoid, malaria, and so

on), and phosphorus-poisoning sometimes give rise to changes closely resembling those observed in acute yellow atrophy of the liver. It is probable that you are dealing with a hypertrophic condition. There is, of course, no satisfactory treatment for acute yellow atrophy. In phosphorus-poisoning, the prognosis is far from satisfactory.

Before we attempt to venture therapeutic suggestions, we should like to have a much clearer idea of conditions generally and, if possible, see one or two specimens of urine from typical cases. The area of hepatic dulness should be carefully ascertained, also the character of stool observed.

In this connection, we would call attention to the very interesting article by Dr. Louis G. Irvine, entitled, "Gassing Accidents from the Fumes of Explosives," which appeared in *The British Medical Journal* for January 29, 1916, page 162.

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 QUERY 6247.—"Recurrent Dermatitis." A. T., California, asks advice in the case of a man aged forty-six suffering from an eruption of twenty years' standing, which first manifested itself slightly under the chin and was thought to be due to rhus-poisoning and treated accordingly. Soon, however, the entire face was involved and large scabs formed; these disappearing after about three weeks, only to return again. Other parts of the body were similarly affected to a slight degree. With cold weather, the trouble disappeared, but the following summer it returned, and so every summer thereafter.

"All kinds of local treatments have been tried, but only seem to increase the trouble. The cold weather of the middle West always brings relief. Humidity (especially extremely hot nights) makes his trouble very much worse. The cool nights of California afford some relief, except during the burning and swelling stage. The itching is intense and almost unbearable, especially at night. If the beard is not shaved off, the itching is worse; still, this operation is almost intolerable. At times, the eyes are swollen shut and burn fearfully, and sometimes the forehead is red and swollen; the scalp, however, is clean, but nearly all the hair on top of the head has been lost. Any exercise, even walking, during warm weather sets the face on fire. Bending over causes burning and intense redness of the face. When, as a public speaker, on the rostrum, he gets the least bit warm, a burning of the skin sets in for a time that is almost unbearable. Relief comes, to some extent, when he is cooled off by cold baths or eating or

drinking something ice-cold. A warm meal will cause or increase the burning and itching.

"His general health is first-class. Physicians of recognized ability, skin-specialists (including some of the big cities) have pronounced his general health excellent, but, also, afforded him no relief. Salves and washes of every kind have been tried, without benefit. When the burning ceases, the local trouble disappears in a few hours. Change of climate seems to make no noticeable difference or what perhaps does good one year may fail another. His habits are, and always have been, the very best, while, in general, the patient 'lives the simple life,' especially as to foods, sleep, and so on. The winter season never has failed to bring relief and the skin then is in perfect condition. The bowels are regular. The urine shows the presence of total solids, 4.6 percent, urea, 2 percent, a very slight trace of indican, and many calcium-oxalate crystals, the specific gravity being 1020.

"Cultures have been made from the pus possible to obtain from the scabs or scales and from these autogenous vaccines were prepared. But this, also gave no decided result. The first two specimens contained pure cultures of staphylococcus citreus, the last one was found and prepared from staphylococcus citreus and the bacillus mucosus."

We are inclined to regard your patient as suffering from a basal trophoneurosis of toxic origin, with a secondary infection (staphylococcus) of broken skin areas. We can hardly consider it a case of chronic rhus-poisoning. Still, the fact that the various excellent physicians have found him in good health and are unable to arrive at any definite diagnosis must be given due weight. But, the other fact that this man has become partially bald is suggestive, although you must remember that with a great many men of forty-six there is "no hair where the hair ought to grow."

It hardly is likely that vaccines alone will prove of value. In this connection, we would urge the careful perusal of Doctor Wolverton's article which appeared in the August issue of CLINICAL MEDICINE. It is more than likely that comparatively large doses of nuclein and lecithin, in alternation with liquor arsenii compound, will be productive of benefit. In just such cases, small doses of cactoid and ergotoid also have proven markedly useful. During the attack, carbolyzed epsom-salt sponge-baths may be tried, for temporary relief.

As you will observe, elimination is far from what it should be. Boldin, gr. 1-32; and irisoid, gr. 1-6, might be given, before meals,

for two or three weeks, before beginning with the liquor arsenii compound and the nuclein-treatment.

QUERY 6248.—"Inula Helenium. Sugar in Cardiac Diseases." J. F. W., Illinois, asks whether the active principle of inula is obtainable. Also he wants to know whether it is true, as he has heard, that physicians are prescribing sugar (either dextrose or levulose) in cardiac decompensation—as a muscle-builder, so to speak.

Helenin, a stearoptene (the camphor of a volatile oil) from inula helenium (common-name, elecampane) is being used quite extensively. This principle primarily acts upon the mucous membranes—especially of the respiratory tract—and secondarily on the lymphatic and glandular systems, increasing functional activity and energizing the tissues. It decidedly favors vegetative metamorphosis, liquefying and dissipating exudates. It has been described as a tonic and expectorant, also to some extent diuretic and diaphoretic.

Helenin is indicated in atonic dyspepsia, general debility, pulmonary and bronchial catarrh, and in exanthems where the eruption is retarded. In whooping-cough, the efficacy of helenin is remarkable. Competent clinicians have observed marked reduction of laryngo-pharyngeal excitability whenever this drug is given to effect. It is rapidly eliminated from the system. The ordinary dosage is 1-6 to 1-2 grain repeated every two to four hours, to effect. For children of 2 or 3 years, the dose is 1-64 grain, given at the same intervals.

There are on record a number of cases in which sugar has been used successfully in heart affections. Denyer, of London, (*Lancet*, April, 1913) says that cases associated with edema or anginal pain and those that are secondary to renal disease do not seem to be improved by the sugar-therapy. However, he reports the case of a woman 77 years of age who had had an irregular pulse for years and who was benefited by this treatment. At one time she experienced a severe heart attack, with a rapid, irregular, feeble pulse. There was cyanosis; from time to time dyspneic paroxysms occurred. There was no edema at any time. Amyl nitrite, digitalis, strychnine, and oxygen failed to relieve the condition. When death seemed imminent, 4 ounces of sugar taken in the course of twelve hours, caused her to rally. After that this sugar diet was continued, first, for some time, in the same dosage, then gradually decreased. She made a fair recovery.

In the *Deutsche Medizinische Wochenschrift*, of 1911, No. 50, there is an account of a woman 62 years old who had weakness of the heart-muscle, as a sequel of influenza. The attending physician prescribed cane-sugar, 60 Grams daily, gradually increased to 110 Grams, apportioned to the several meals. It seems that the cane-sugar manifested "a nutritive power which seemed almost specific for the heart-muscle." After such a course extending over eight weeks, the patient was able to take long walks, although before that she had become very easily fatigued. The cardiac symptoms—consisting of a slight systolic murmur at the apex, rapid and feeble pulse, high blood-pressure—disappeared, the author attributing a miraculous action to this treatment in question.

The following abstract from Goulston's pamphlet entitled "Cane-Sugar and Heart Disease," which appeared in the *London Lancet* for December 12, 1914, contains further information bearing on this subject:

"Having in view the use of sugar in the German army and among the Alpine climbers to sustain them under severe cardiac strain, the author was induced to try the effect of pure cane-sugar in the treatment of various kinds of heart disease which failed to respond to ordinary treatment. His first case was that of an enfeebled lady, 74 years of age, who suffered from fluttering heart, with rapid, irregular, and intermittent pulse. Under the cane-sugar treatment, she gained strength and vigor, and now, ten years later she is quite well, walks out daily, and travels alone.

"The author discusses the subject of heart failure, the physiology of cane-sugar in relation to the heart-muscle, and gives the details of his method of treatment, which consists in the administration of 2 ounces of pure cane-sugar daily for the first week, 3 ounces for the second week, and 4 ounces from then on as long as required. Total abstinence from alcohol and tobacco is enjoined, diuretics are given, if required, and rest and plain diet are enforced.

"The class of cases in which he claims to have seen almost constant benefit includes auricular fluttering and pseudo angina pectoris due thereto, auricular tachycardia, valvular lesions after acute rheumatism, and tobacco-heart. He records 20 representative cases, with a few illustrative tracings. The report contains clinical records carefully taken, not always by himself. The book is suggestive, although the cases are hardly sufficient in number to justify any general conclusions or wide claims."

Thus, it will be seen that the possibilities of cane-sugar, therapeutically, seem to be great. You are, aware, of course, of the fact that sugar has been recommended as a surgical dressing. Furthermore, its use, in the form of enemas, is strongly advocated in amebic dysentery.

QUERY 6249.—“Hematuria of Obscure Origin.” E. S. B., New York, forwards a specimen of urine for examination and, in his letter, says: “I am at a loss to understand where the blood comes from. The patient, forty-nine years old, has been in the best of health up to two weeks ago, when blood appeared in the urine. There have been no chills, the temperature is normal, but she experienced one attack of pain simulating renal colic. At times, her urine is perfectly clear. She cannot say whether the blood comes first or last, but believes that it passes simultaneously with the urine. The blood is bright-red and at times considerable in amount. On deep pressure, there is felt a slight soreness both over the bladder and kidneys. In general, she feels well and has a good appetite. She passed the climacteric two years ago, without trouble. Her pelvic organs seem to be in good condition. I have told the family that, in my opinion, the hemorrhage comes from the kidneys, and have advised rest and a milk-diet.”

It is to be regretted, doctor, that you failed to state the total amount of urine voided during twenty-four hours, hence the total solids and urea can not be estimated. As for the test, a very few renal cells were found to be present in the specimen, besides some squamous epithelium and a moderate amount of pus. Mucin is absent and there are no blood casts or any signs of crystal formation. Under the circumstances, it is doubtful whether the blood is of renal origin. However, the source of the pus must be definitely ascertained. The comparatively large amount of pus and absence of mucin leads us to think it may be of vaginal origin, as it so frequently is in women. We do not find elongated clots, which would evidence the passage of the blood through the ureter.

As you are aware, hemorrhage from the bladder imparts a uniform red color to the urine, although, if collected in three glasses, the last glass contains the most blood. If the bladder is washed out clean and the catheter (plugged) left in place for a short time, the bladder contents again will become bloody. Sometimes the cystoscope alone will reveal the source of the hemorrhage, and it is essential to

discover the cause if the blood is of renal origin. In nephritis, renal bleeding sometimes occurs without previous signs of the existence of the disease. If the tension is high, the presence of interstitial changes in the kidneys may cause otherwise unexplainable bleeding.

QUERY 6250.—“Tonsillectomy a Cause of Sterility?” J. E. B., Texas, speaks of having seen the statement that removal of the tonsils of a boy will render him sterile, and adds that, while at first glance this does not appear reasonable, yet, in these days, when we hear so much about the interaction of the various glands of the body, one scarcely dares to dispute any such assertion without having a wide experience to back up the argument. “If there is any actual confirmatory evidence,” he asks, “are such undesirable effects confined to men or are women similarly affected?”

“Recently the passage, ‘Blessed is he who openeth the womb,’ which appears in the Bible somewhere, was quoted me in justification of intentionally induced abortion. I answered that, basing upon the general teaching of the Bible with regard to the bearing of children, my idea was that it referred to priests or physicians who in case of necessity assist midwives in cases of difficult childbirth—malpresentation, for example. Can you give the probable meaning intended to be expressed by that passage?”

The question as to whether the tonsils produce an internal secretion which may have a bearing on the function of the sexual glands cannot be put aside offhand. Harrower quotes some experiments, reported by Ott, according to which powdered dried tonsils and watery extract of tonsils were found to contain a powerful diuretic principle, stronger than either the infundibular tissue, the parathyroid bodies, and the pineal gland.

Tonsillar substance was found to exert a decided influence upon the circulation, producing at first a brief fall of blood-pressure and a decrease of the number of heart beats, this being followed by a reaction, in the form of increased arterial tension and pulse-rate. From this it is inferred that tonsillar secretion acts upon the heart-muscle. Possibly you may be able to get further information from Doctor Harrower himself, addressing him at 1107 West Seventh Street, Glendale, California.

As to the question whether tonsillectomy does or may produce sterility, the only answer possible at present is that we do not know. Although not probable, it is not impossible.

Regarding the "Blessed is he who openeth the womb," quotation which you accuse the Bible to contain, the present writer doubts that it even has been seriously investigated. However, you have put the cart before the horse, for you would have come nearer the truth had you quoted, "He that openeth the womb is blessed." As a matter of fact, the exact language put into the mouth of Jehovah (Exodus 13 : 2) is as follows: "All the first-born, whatsoever openeth the womb among the children of Israel, both of man and beast: it is mine." The meaning is, of course, that the priests claimed the firstborn of every woman, for temple-servants, and the firstborn of every animal, for the temple-table. Later, this dedication of all the firstborn to the Deity probably was found very difficult to carry out, and it was modified so that the tribe of Levi was sanctified to the Lord, in the place of all the firstborn—"for, they are wholly given unto me from among the children of Israel; instead of such as open every womb, even instead of the firstborn of all the children of Israel, have I taken them unto me." (Numbers 8 : 16.)

The first law is referred to briefly in Luke 2 : 23: "As it is written in the law of the Lord, every male that openeth the womb shall be called holy to the Lord." The children of Israel always formed a notable difference from all the other, child-murdering, tribes and nations, in that they considered children to be a blessing, and further, in holding family-life sacred. And this is a distinction that characterizes the Jews even to this day and entitles them to respect among other white peoples.

Coming back to the main question, it hardly needs pointing out that present day conditions of social life undoubtedly tend, in themselves, to promote sterility or, at least, to diminish fertility, so that it hardly requires active interference with the laws of nature by deliberately promoting race suicide or lowering the birth rate. Our civilization, so called, is attending to that in a most effective manner.

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QUERY 6251.—"Arthritis Deformans." J. W. M., Massachusetts, describes a case of arthritis deformans of eighteen months' standing that has resisted all antirheumatic and tonic remedies and is growing progressively worse. Some of the joints apparently are badly damaged. The patient also has a large cystic goiter of at least eight years' standing, which gave her considerable trouble several years ago, but which under treatment seemed to quiet down, although it continued

to grow slowly. At first she had symptoms of hyperthyroidism, but now the opposite obtains.

The Doctor thinks that the goiter has caused a disturbance of the internal secretions that is keeping the rheumatism from getting well, and believes that a balanced prescription of the extracts of the blood-glands might prove curative. He wants our opinion, also hints as to related literature.

We suggest, doctor, that you write Dr. Henry R. Harrower, of Glendale, California, who is secretary of the Association for the Study of the Internal Secretions. As you will readily understand, however, it is impossible to make any definite therapeutic suggestions in this case, without a much clearer idea of basal pathological conditions. By all means, the patient's blood and urine should be examined; moreover, it is a question whether the goiter should not be removed.

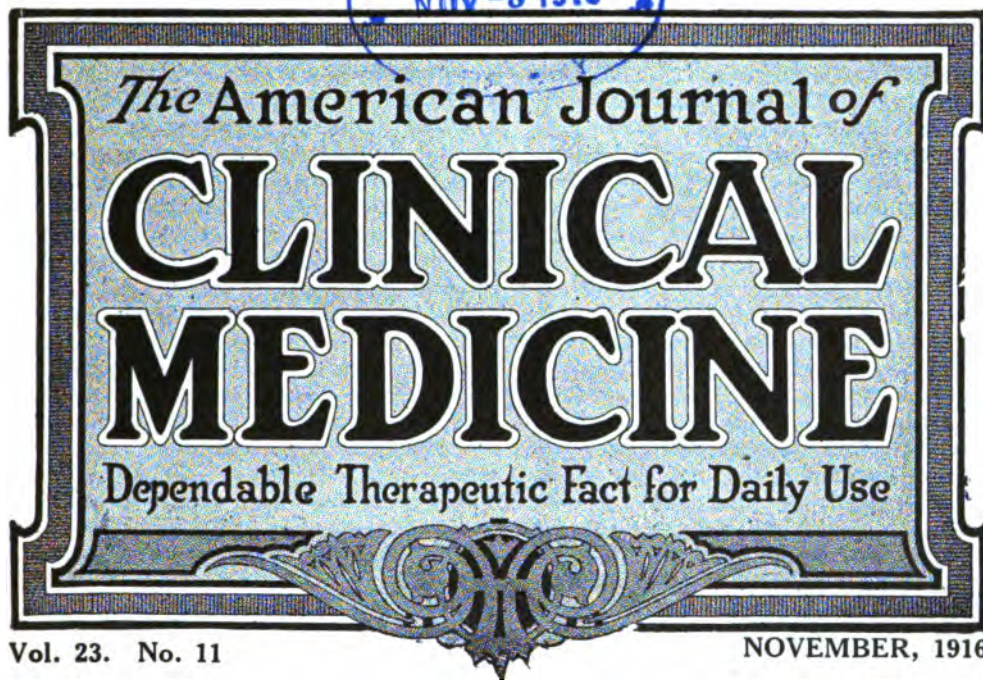
Sajous' "Internal Secretions" and Harrower's book entitled "Hormone-Therapy" would prove informative. Personally, however, we should be inclined to regard the goiter and the arthritis as entirely separate pathological conditions. It is true, of course, that deranged thyroidal functioning might predispose the individual to infection.

Great diversity of opinion still exists concerning the cause or causes of arthritis, and any classification must be regarded as provisional only, subject to alteration in the light of future knowledge. However, in all forms (save the gonorrheal), there is a toxic infection the organism and the source of which differ, but the individual's reaction and resistance determining, to a great extent, the changes consequent upon it.

Unquestionably septic absorption is at the root of most cases of arthritis, bringing them to a certain extent into line with definitely recognized gonorrheal and pneumococcal forms. Perhaps among the commonest sources are pyorrhea, dental caries, tonsillitis, pharyngitis, pyelitis, gastrointestinal conditions (upon this factor we have always laid special stress), uterine infections, influenza, suppurating wounds, sinus suppurations, and bronchiectasis.

A very interesting monograph on this subject will be found in J. Keogh Murphy's "The Practitioner's Encyclopedia of Medicine and Surgery."

Goiter and its treatment is considered in nearly all modern works, a very informative treatise being contained in Forchheimer's "Prophylaxis and Treatment of Internal Diseases." Cystic goiter nearly always requires surgical treatment.



Lobeline Possibilities

The child is frightened most by the unknown, the terror that springs out of the darkness, while, however real any threatening danger may be, it excites less apprehension if it is seen and comprehended. One is reminded of this when he hears men speak of the dangerous character of certain drugs. When we do hear such a pronouncement, we know the speaker never made use of the remedy that he denounces. Singularly enough, the drugs most generally shunned as dangerous are those that, in all the *materia medica*, are safest, in that their action ensures their own elimination from the body. Thus, while a single dose of *digitalis* has killed a man, because the drug shut up the terminal renal arterioles and in that way prevented its own escape from the body, *aconite*, *veratrum* and *lobelia*—the dreaded and proscribed—are among the drugs that relax vascular tension and thus allow a free flow of blood to the emunctory apparatus.

Lobelia is a drug dreaded by those who have not learned to know it by practical application, while, on the other hand, it is trusted to a remarkable degree and utilized in a very wide range of cases by those practitioners to whom it has become familiar through actual use. To the Thomsonian, it was a right bower; but, by the same token, it was anath-

ema to his opponents. The amazing results of the modern trials of *emetine*, after four centuries' common use of the parent plant, lead us to inquire as to what possibly we may find of value in the allied alkaloid present in *lobelia inflata*.

Lobeline, the liquid alkaloid of *lobelia*, was discovered by Proctor. Later, Endros found in this plant another principle, which he named *lobelacrin*. It is to this latter principle that the great Italian pediatricist Laura attributed the irritant effects of the plant, as well as the circulatory and respiratory disturbances and the general depression following maximum doses of it. Lloyd asserts that *lobelia* is so rapid in its emetic action that poisoning by it is impossible. Cushny says that lobeline increases reflex excitability, hastens the respiration by stimulating the spinal and medullary centers, and causes the breathing to become deeper and stronger. The blood pressure at first falls, but soon rises above normal. The saliva, bronchial mucus, perspiration, and the secretions of the entire alimentary canal are increased. The older writers found that it acted as a vital incitant and that its use was followed by a remarkable sense of extreme satisfaction and repose—of euphoria. The mental powers were unusually active and the sense of wellbeing

even was compared with that following morphine. We now attribute this condition to the elimination of hemic toxins, and recognize it as similar to the euphoria following the action of any cholagog cathartic, but, by the administration of lobeline in minute doses, repeated to a point short of nausea, we secure the same sensation of comfort without inducing active catharsis.

The list of diseases for which lobelia has been recommended is a long one, still, its true place in therapeutics may be stated in few words. Lobelia relaxes spasm and vascular tension, and it increases all the secretions and excretions. As an antispasmodic, it has proved effective in eclampsia, chorea, epilepsy, and even in tetanus—the beneficial effects depending upon its eliminative powers. Asthma, whooping-cough, and the spasmodic forms of chronic bronchial catarrhs are speedily quelled by a sufficiency of lobeline. In acute bronchitis, it hastens the stages by inciting free secretion. Ruatta urged its use, as a relaxant in strangulated hernia. E. Cornet praised lobeline in the spasmodic cough of phthisis, and found its effects "almost magical" in the various forms of croup. As an ingredient of laxative combinations, lobeline is advisable whenever costiveness is present.

Quite recently, Edmunds showed that lobeline acts most powerfully upon the renal, vagus, and superior cervical ganglia, its action upon the inferior and mesenteric ganglia being deferred and incomplete. He found it impossible to stop the heart with muscarine after an injection of lobeline; he noted also that the latter would start the heart after it had been stopped by muscarine. Lobeline should prove useful in poisoning by the fly-amanita, although not by the phalloid variety.

In treating animals, Browne (*CLINICAL MEDICINE*, August, p. 678) found that lobeline is almost indispensable in the tetanus and azoturia of horses. It should prove of great value as a nonnarcotic sedative for the colic or hyperemia caused by renal calculi. It should also be given a trial in spasmodic asthma, spasmodic laryngitis, whooping-cough, hysteria, hysterical convulsions, and eclampsia.

In azoturia in horses, when the animal was almost uncontrollable, Browne found that 1-10 grain of lobeline sulphate rendered the animal perfectly tractable and apparently free from pain.

In emphysema or heaves of horses, injections of lobeline had no apparent effect.

Doctor Browne found the respiration greatly increased in rapidity, but observations here were interrupted by vomiting and defecation in from one to two minutes after the injection. The horse's heart, after a preliminary quickening, was slightly slowed, the pulse being full, soft, and regular. Of a total of 36 animals injected, all vomited and all but 4 defecated. No animal showed any depressant or narcotic effect.

A 10-pound dog was not adversely affected by the injection of 1-2 grain of lobeline, and the observer gave up expectations of recording any toxic effects. Salivation was evidenced in the majority of the animals and secretions were stimulated throughout the body.

Lobeline is admirably suited for the intensive method of dosage. One-fourth of a milligram may be administered and repeated every five to thirty minutes until slight nausea indicates the supervention of beginning toxic action. This is absolutely safe, and effective whenever the antispasmodic or relaxant, or the secretion-incitant effects are desired. In eclampsia much larger doses are employed, and the remedy is pushed to full relaxation. A milligram may be added to each dose of a laxative pill, to overcome dryness of the fecal mass. Even to very young infants this "dangerous medicine" has been given as a laxative with the best results.

Lobeline is liked best by those who have employed it most. That there are certain specific virtues in it is their firm belief; and it would be no surprise were it to rival or exceed emetine when modern methods of study and experiment have been applied to it.

Difficult questions are not solved by men but by events.

THE NEW ANTISEPTIC

It is unusual for us to refer to a proprietary preparation in the editorial pages of *CLINICAL MEDICINE*. When we vary from this custom, it is because we believe it our duty to bring to the attention of our readers some product of a very unusual character. This is our explanation for now speaking of chlorazene, the new synthetic antiseptic, in three successive issues of this journal.

For many years the profession has been searching for an antiseptic that at the same time would be highly germicidal and harmless, or at least relatively harmless, to the tissues and to the individual. Chlorazene seems to meet these conditions more nearly than any

antiseptic heretofore introduced. We use the expression "seems to," well knowing, of course, that the exact field and exact indications and possible disadvantages as well as the exact advantages of this synthetic salt can be fully determined only after extended clinical trial. At this moment, we only can say that the reports thus far received bear out the claims made for this substance by Dakin in his interesting paper published in *The British Medical Journal* for January 29 of this year.

This work of Dakin is all the more interesting and, in our opinion, more to be depended upon, because it is disinterested on his part. We are in a position to say that these investigations were carried on and the product put on the market without any expectation of gain. So far as Doctor Dakin is concerned, his study of antiseptics has not been a money-making venture, nor was it expected or desired by him that it should be. The opinions which he has expressed, therefore, with regard to the virtues of this antiseptic, have not been colored by the hope of gain. We make this statement, because it is right that the profession should know the exact attitude of Doctor Dakin and the thoroughly disinterested character of his investigations.

This attitude of Doctor Dakin in this matter has served to increase our own confidence in the value of this antiseptic, which again we wish to commend to the medical profession for careful clinical test in all sorts of conditions where antiseptics are indicated. Reports of experience with it are invited from the readers of CLINICAL MEDICINE, for publication in these pages.

The reason a man has a lot more temptations than a woman is because he knows just where to look for them.—Chicago Tribune.

THE VACCINE-TREATMENT OF INFECTIOUS DISEASES

Some years ago, a Hollandish scientist declared that the study of tuberculosis has entered the phase of immunization. Sir Almroth Wright asserted that the physician of the future will be an immunizator. Indeed, the vaccine-treatment of bacterial diseases has become extremely popular. Some physicians call it a passing fad, others say that it has become a fetish.

In discussing the specific, that is, the directly antagonistic, antibacterial treatment of germ-diseases, we refer complacently to the "modern" treatment, forgetting or neglecting to state that the principle upon which this

definite form of therapy rests has been employed by homeopathic physicians for many years and that priority of its application undoubtedly belongs to them. Indeed, the underlying principle is so manifestly in conformity with the "law of similars" that vaccine-therapy may, in a way, be taken as a vindication of Hahnemann's contention. As a matter of fact, claims to this effect are not infrequently being advanced in homeopathic journals, and it would be both undignified and incompatible with a true scientific spirit to do less than give honor where honor is due.

While we are firmly convinced of the great importance and value of the vaccine treatment in diseases owing to bacterial invasion and activity and even are enthusiastic in its support, we, nevertheless, are far from adding or suggesting that it is the be-all and end-all of treatment. As a matter of fact, it would be a grave mistake to limit the treatment of a patient suffering from typhoid fever, for instance, to the injection of a vaccine or bacterin containing so and so many killed organisms, or to dismiss a tuberculous patient after merely injecting a dose of tubercle bacillus emulsion, and expect both these patients to recover forthwith.

That sort of treatment may be expected to work, perhaps, before the disease actually exists, that is to say, before the infecting organisms have succeeded in producing pathological changes in the tissues of the body—before, in fact, the infected person has become ill. But after the bacterial disease has declared itself, the problem confronting the physician has become complicated; and no longer can be solved, but only aided, by the simple injection of a bacterial preparation, no matter how "specific" it may be.

In a case of typhoid fever, for instance, in which the temperature has shown the characteristic ascending curve of the first week, it is too late for typhoid-bacterin to do good; it is necessary to apply systemic treatment; which means, to aim to remedy the pathological conditions in the intestinal tract, to render the buccal cavity and the entire digestive tube as free from pathogenic bacteria as it can be made, and to counteract the results of the existing bacteremia.

In addition to this general treatment thus briefly indicated, there may be various symptoms that require individual attention in order to promote the comfort of the patient. While we no longer consider it proper always to suppress forcibly and at all odds fever-temperature in the patient, it, still, is not advisable to permit the temperature reaction

to the infection to exceed a certain limit of safety, and it is well to take measures in this direction when this limit is exceeded.

Then, if constipation exists, we prescribe suitable remedies for its relief; or, if the opposite condition obtains, we take steps to remove the foul, fermenting, infected and toxic content of the intestinal tract, in order to prevent its absorption into the circulation. We also support the heart in its struggle and in the excessive strain under which it labors. We supply as much nourishment as can be assimilated. We attempt to promote the patient's comfort by sponging and other means as much as is in our power.

While, then, the vaccine treatment of bacterial diseases undoubtedly is an agent of great merit and potency, it will never do to limit the management of disease to it alone; but it is necessary to pay attention to the general hygiene of our patient just as much as has been the case in the past, and even more so.

If this point is considered in its full bearings and in all its possibilities, it will be seen that the "modern specific treatment" by means of bacterins or vaccins is not a shortcut and does not diminish the responsibility or the work of the physician. It is an extremely potent weapon, and all powerful agents must be handled with care and circumspection. The employment of biologic remedies demands a careful study of our patients and of all phases of the cases confronting us. It requires an exact diagnosis as also a full knowledge of all the resources of the patient that need stimulation and support in his struggle against disease.

But, bacteriotherapy has this advantage: it eliminates promptly, in successful cases, the leading factor of the infection and of the intoxication dependent upon it, leaving us to deal with the morbid tissue changes that have occurred in consequence of the bacterial activity. With the removal of the source of the disease, it is easier, usually, to deal with the disease itself.

"You can get closer to a man by asking a favor of him than you can by granting a favor."

MUSCARINE AND HEMOPTYSIS

Brunton affirms: "If the pulmonary capillaries are contracted, the left ventricle will receive little blood, and, so, will send little blood into the arteries, although the right ventricle may be much distended. This appears to occur during poisoning with muscarine, which causes the lungs to become

blanched, the right ventricle distended, and the left ventricle and the arterial system empty; so that little blood flows from a wound."

Muscarine should be effective in the treatment of hemorrhages from the pulmonary area, if administered in doses sufficient to develop its full action.

Data collected regarding the results of administering atropine in full doses as a remedy for hemorrhages showed its efficacy in every form of bleeding to which man is liable. Very few exceptions were reported, but among them two where it failed in hemorrhage from the respiratory tract.

Since atropine proved invariably capable of controlling passive hemorrhages, it seemed clear that it did so by actively stimulating the vasorelaxants, since, if the action had been a relaxant one directed against the vaso-contractors, these passive hemorrhages must have been increased.

The failures of atropine in hemoptysis were exceptional, and many more successes were reported. It may be that where it failed the doses were not large enough, inasmuch as the efficacy of the remedy was apparent only when enough had been administered to flush the skin, engorging the cutaneous capillaries. The capacity of the capillary system being 700 times that of the arterial system, it is easy to see how a slight increase in the lumen of the former would accommodate so much of the blood that there would be none left to escape from an open vessel.

However, the fact is that atropine did fail in several instances of this form of hemorrhage; and, if any other agent were to offer greater probability of success, that is the remedy of choice.

In this respect, we may advert to the recent use of emetine for pulmonary hemorrhages. Emetine is rather closely allied therapeutically with muscarine, and the success of the former is more presumptive evidence favoring the likelihood that the latter should prove effective.

Muscarine is peculiarly difficult of dosage, since, like other relaxants of vascular tension, it passes out of the body swiftly. Hence, it should be given in very close doses, a milligram every five minutes, until its characteristic effects are manifest. These are softening of the pulse, general relaxation, and coolness of the skin. It should not be pushed to the induction of vomiting, purging, anemic vertigo or muscular weakness. An overdose is speedily overcome by atropine, which, although slower in getting to work, is far more powerful than muscarine. Muscarine ren-

ders the heart beats weaker and slower, and large doses arrest its movements.

This alkaloid might be tried when there is that stuffy feeling in the chest that precedes a hemorrhage. Also, since the consumptive usually is relieved by the bleeding, provided pains are taken to avoid the inflammation excited by dead blood, it seems that muscarine, by lessening the quantity of blood in the lungs, should exert the same beneficial action as a pulmonary hemorrhage. If this remedy also proves useful in relieving the cough, it may be a valuable addition to our therapeutic resources in phthisis.

However flowerless the ways
Of grim November,
However dull and drear her days,
We should remember
One happy time she sets apart
For royal living,
A gift to cheer and bless each heart—
It is Thanksgiving.

—Emma C. Dowd.

THE PLACE OF CALCIUM SULPHIDE IN THERAPY

Since the conquest of South America, more than four centuries ago, ipecac has been one of the commonest of our remedies. For all that, it is within the last few years that we have witnessed an amazing widening of its therapeutic application. When its chief active principle, the alkaloid emetine, was isolated and presented in chemically pure form, the remedial values discovered to be residing in it fairly amazed the medical world. We look upon this fact as the opening-wedge of a revival of interest in drug-therapeutics. Indeed, we may say frankly that there is not a drug described in the dispensatory the limits of whose useful applications are fully known.

It has been but a few years since we discovered in magnesium sulphate properties such as the profession did not dream of during the centuries of its constant daily employment in various ways. What drug will be the next to attract the attention of the medical world to the wonders lying undeveloped in our *materia medica*?

Just now the remedy apparently most likely to come into immediate prominence is calcium sulphide. For years, our journals have published, from time to time, papers in which favorable mention has been made of this chemical; although thus far no one—outside a certain group—has appeared to be particularly enthusiastic about it. Just now, you know, enthusiasm over any therapeutic measure is rather out of date.

On the other hand, whenever calcium sulphide has been written about, the comments have been significant. Thus, Robinson, in his *Critic and Guide*, quotes a case of gonorrheal rheumatism in which billions and billions of bacilli had been injected, without benefit, after which brilliant success followed saturation of the patient with calcium sulphide. This experience has been repeated by quite a number of other clinicians. The present writer has made a like use of this chemical in many instances and up to the present it never has disappointed him.

In a recent issue of *The New York Medical Journal*, Gray, in speaking of the treatment of German measles, writes: "The one drug that may be commended for its service is calcium sulphide. But it must be an efficient preparation, well protected from the atmosphere." This concluding warning seems to be especially needed with regard to this remedy, the pharmaceutical manipulation of which appears to present unusual difficulty. One eastern firm, some years ago, made public announcement that it had withdrawn all calcium sulphide preparations from its list, having found it impossible so to manipulate it as to be able to guarantee the preparation.

The present writer has had many striking illustrations of the value of calcium sulphide of prime quality, perhaps the most notable more recently being one that happened two years ago. A baby landed in our summer camp with a full-blown whooping-cough. There were more than twenty children in the camp that were not immune to this disease. An examination of the child showed that its banishment would probably result in its death; so, the question arose as to preventing extension of the disease through the camp. Happily, this proved an easy matter: the pertussic baby was saturated with calcium sulphide, whereupon it promptly recovered from the whooping-cough; and although the nonimmune children associated freely with it, not one contracted the malady.

One might be tempted to ask whether it were possible that the disease had reached the noninfectious stage, if such a thing really occurs in whooping-cough—one of the most infectious maladies known to humanity.

This is but an isolated instance, the doubter might suggest; but, when for many years such experience has been unvarying, we may be quite sure of the action of the remedy. Frequently this writer has saturated the children of a family in this manner when one had contracted the disease; and the others,

nonimmune, not only escaped the infection then, but for years afterward proved immune to infection with this particular malady.

The only explanation which seems possible is, that before calcium sulphide was administered they had already contracted the disease to such a degree as to confer the same immunity as those enjoyed who passed through the entire course of the affection.

For twenty years, an unbroken series of similar experiences has occurred to this writer, in dealing with children affected with mumps.

The question now arises, would saturation with calcium sulphide be effectual in warding off an impending attack of infantile paralysis? Since the remedy is harmless, is easily administered, and its effect is quickly and markedly manifested, there seems to be no reason why a widespread experimentation should not be conducted.

In the case of any children under ten years of age, when undoubtedly exposed to the infection of infantile paralysis, we earnestly advise prompt saturation with calcium sulphide. This does not mean that other measures should be neglected, such as putting in order the hygienic surroundings of the child, in and about the residence, careful cleansing of the throat and nose with non-irritant antiseptics, care for the digestion, especially seeing to the functioning of the alimentary canal, and such other measures as the physician may deem justified in each particular case.

Finally, let us have reports of your experiences, whether they be good or bad—especially if adverse.

The world applauds and bows before success and achievement; it has little thought for those who fall by the way, sword in hand; and yet it takes most courage to fight a losing fight.—Edward L. Trudeau.

CARDIANTS

The time is not so long ago when about all that the body of the physicians knew about the therapeutics of the heart was that digitalis acted upon a certain part of our anatomy, the heart. And a dangerous bit of quasi-knowledge it was, too. The heart is not a physiologic entity, an atom, one and indivisible, but an organ containing muscular tissue, nerves, and vessels. Yet, even now the fact that digitalis is employed far more extensively than all other cardiants together leads one to question whether the profession as a body has greatly altered its position or its practice.

Remedies may incite or sedate the muscular tissue; the central or the peripheric nerve-ends or their trunks or alter the caliber of the vessels either by stimulating or relaxing the vasomotors or the vasodilators. In fact, Brunton arranged the cardiant remedies under nine classes, each with two groups.

The cardiac muscle is stimulated by

Digitalin
Digitalein
Digitoxin
Erythrophloëin
Helleborein
Nerein (from oleander)
Silelain
Antiariac
Strophanthin
Thevetine
Thenveresin

The above are known as cardiac poisons. Larger doses cause stimulation followed by peristaltic action, and finally arrest of the heart in systole.

Stimulants not included in the above groups are:

Veratrine
Barium salts
Caffeine
Potassium salts, in small doses
Copper double salts, in small doses
Zinc double salts, in small doses

Another group comprises agents that do not cause cardiac peristalsis or arrest the heart in systole, but they excite the heart to pulsate rhythmically, after it has been made to stand completely still in diastole by the application of muscarine. These are:

Guanidine
Physostigmine
Camphor
Monobromated Camphor
Borneol
Arnica camphor
Aniline sulphate
Cumarine

In the case of all these, stimulation is denoted by increase in the energy of the contractions, the rate of the pulsations remaining the same or being slower.

Depression is shown by weakening of contractions, with final stoppage in diastole. The heart-muscle is shown to be paralyzed, by no longer contracting on being stimulated by mechanical or electric irritation.

The cardiac muscle is depressed or paralyzed by

Salicylic acid, in large doses
Potassium salts, in large doses
Copper double salts, in large doses

Zinc double salts, in large doses
 Quinine, doubtfully
 Saponin, which removes the systolic
 standstill induced by digitalin
 Apomorphine
 Emetine
 Muscarine
 Pilocarpine
 Veratroidine
 Jervine

To these may be added digitonin, which closely resembles other saponins in its action.

The seeker after new knowledge, the research-worker, need not fear that the field of therapeutics has been fully gleaned. The truth is, that it has not been reaped or even skimmed over. Take this example: Go to the best medical library in reach, get out all the modern textbooks on therapeutics and from them tabulate the data on the list of cardinals above given.

One need not go into minute particulars, but state the action of various-sized doses, the time required for each to manifest its activity, the time required to reach its maximum of energy, how long this endures, how much time is occupied by the subsidence of activity, and the routes by which the medicinal principle leaves the system, and how long this takes. Since there are groups of remedies known to affect certain parts of the cardiac organism, such as the muscular fibers, one should know in what respects these differ; for, if the action is identical, the remedial agencies must be identical, and *vice versa*—if these are different, their action can not be absolutely uniform.

But, if you find that all the textbooks published fail to supply this elemental information, kindly tell us why we should look upon therapeutics as a finished, completed study, in which no further advance can be made? Finding that all the therapeutic texts in the world fail to give these primary facts, you will begin to realize with us that we have not yet even begun the investigation, in the modern scientific manner, of our remedial resources.

When this stupendous work shall have been made, then we may begin to observe the action of drugs in combination. The final result must be that we have a cabinet of remedies with which we may affect the disturbed vital functions in the way of restoring physiologic equilibrium and health before material lesions have been effected.

A dream of the millennium? Probably; but neither we personally nor the world at large will be hurt if we seek to produce

millennial conditions, each in his own sphere.

The role of the family practitioner is a more important one than the specialistic tendencies—greater in the public than even in the profession—would appear to admit. Both prevention and cure, mainly the former, are his duty and his privilege.—Abraham Jacobi.

THE NONOPERATIVE TREATMENT OF GOITER

Consciously or otherwise, we all tend to move along lines of least resistance. In the case of goiter, it seems the easiest method to ship the patient off to Rochester, Minnesota, with our best wishes for the results.

There still is, however, a remnant of the profession who believes that an effort to cure a diseased organ must sometimes be successful, at least often enough to make it worth while trying before condemning it.

Take, for instance, that form of goiter likely to develop in young girls at the period of puberty. There assuredly subsists some association between the thyroid-malady and the tremendous change taking place in the constitution of the girl at this time. It certainly does not seem unreasonable to entertain a belief that methods of treatment may be put into operation that will check exuberance of both functions and reduce them, aided by the gentle influence of time, to a physiologic level. We have long advocated the change in the relations of the physician to the community that would make the former the adviser with a view to preventing, rather than treating disease.

It seems as if the development of the medical profession and of the general intelligence of the community has progressed to such a degree that children may be brought up under the advice of the physician, instead of never seeing him until they are stretched upon the bed of pain. At what time of life is the sanitary direction of the family of greater importance than when the young girls are passing from girlhood into womanhood? The development of some physical or mental disease that is influencing the entire future life often can be traced to improper management during the years of incipient puberty.

Just as we had reached this interesting point in our discourse, chance threw into our hands a copy of a journal published by a certain set of medical practitioners who still believe in the utility of strictly medical services—if they are not so oldfashioned even as to consider that the potent qualities inherent in drugs may be utilized for the

benefit of humanity. In the journal in question, we find a paper upon goiter in young girls, and from this we extract the following passages:

"Wilkenloh (*Ellingwood's*) reports several cases of goiter treated by injecting echafolta into the tumor. One was in a girl of 15, whose right thyroid had enlarged after mumps. She had shown symptoms of tuberculosis at puberty, menstruation irregular, otherwise well nourished. Echafolta, 1 to 2 mils (Cc.), was injected into the tumor every third day; and internally she was given macrotys, echinacea, and scutellaria. The tumor disappeared after three weeks' treatment.

"A girl of 11 had a vascular central goiter, also albumin and sugar showed in her urine. The goiter disappeared after three injections of echafolta. At 21, she married and during pregnancy the goiter returned. Glycosuria persisted until delivery, after which the tumor slowly subsided. No hypodermics were used during pregnancy, but the woman took, internally, macrotys, pulsatilla, nux, echinacea, and amenopsis cal. Without this, the author asserts, the goiter will increase after delivery; with it, the goiter and glycosuria vanish with birth.

"A boy of 17 had goiter following pleurisy—central, soft, with high blood pressure, dysphagia, harsh voice, anemia, and great nervousness. The fluid from the thyroid was bloody, tenacious, containing tubercle bacilli, with streptococci. Great cardiac disturbance, thyroid pulsation quite evident, pulse and heart beat violent. This lasted two days. Injected into the tumor veratrum, 1 to 1 1-2 mils (Cc.), three times in two days; applied libradol thinly over tumor; in two days, the tumor was smaller, heart weak, tension low. Stopped both remedies, gave belladonna and cratægus, with lobelia subcutaneously, injected into thyroid daily for seven days, 16 to 20 minims. The goiter disappeared. After this, the patient had only internal medicine—nux, trifolium, and a meat-free diet. Four years later, there had been no return and the lungs were sound. During the illness, the patient suffered from coughing when he lay in a position that allowed compression of the vagus. This was relieved by tela aranea dropped on sugar.

"A boy of 11 had tuberculous cervical adenitis; thyroid enlargement; injected echafolta into tumor, 1 mil (Cc.) every third day, raising to 3 mils (Cc.). The tumor subsided. Another appeared in the axilla some weeks later and was treated similarly. The high blood pressure fell. He was very nerv-

ous. The axillary injections were painful. He could not lift the arm for twenty-four hours after each, without suffering. Libradol over this tumor eased the pain and promoted dissolution. Internally, he had iris, phytolacca, echinacea, and fucus. The tuberculous masses gradually disappeared.

"A pregnant woman of 24 years; soft, fluid goiter; diabetic; urine, sp. gr. 1042; sugar and albumin; same trouble with first child, but subsided under treatment. Between pregnancies, had gonorrhea. Treatment has kept the goiter in check; but has not cleared up the sugar. Patient will not adhere to diet."

Whether we accept the author's beliefs and conclusions or not, it is certainly refreshing to find that there still remains somebody who believes in the active and hopeful intervention of the physician; and that the ailment, not necessarily destructive of the organism affected, may be tided over; and health may be reestablished with the assistance of good, kindly old Dame Nature; this result being, by no means, unaided by the doctor's efforts.

It is edifying to compare the simple faith underlying the administration of the remedies in question with the half-hearted, pessimistic way in which the ordinary doctor administers his placebos, with which to fill in the time until the patient's mind has become reconciled to the necessity of operative intervention.

Nothing is easier than for those who have never employed the remedies in question to proclaim their utter disbelief in their efficacy. There may be some among the many thousands of readers of this journal who can truthfully say that they have earnestly and justly given full trial to the methods of treatment mentioned in cases similar to those described, and, yet, have not accomplished useful results. Unless one can say this, it is idle to assert that there is no value in medical treatment. One does not have to believe the reports that are published. Yet, several things are necessary before one has a right to express an opinion on any topic of medical practice. Certainly, it occurs not infrequently that, when one endeavors to put into operation the methods and remedies prescribed by a colleague, the second does not win the success asserted by the first. But there are several explanations of this phenomenon. One is, the lack of skill on the part of the second practitioner. Another is, a variation in the conditions, either in the disease itself or in the patient's environment.

Possibly a difference in the quality of the drugs employed occasionally may account for

the notorious differences of opinion among physicians, as to the value of therapeutic measures in seemingly similar cases. When these differences are manifested, however, it seems that the right way is, for all parties concerned to compare their cases carefully and ascertain in what points the difference lies and what may be the underlying conditions. One may not have diagnosed his cases correctly. He may really think that he is treating and curing certain diseases, which, however, are not present. Many a man attributes a cure to the remedies which he has given, when something else has been at work.

There are a good many things about our cases which we do not know. This writer will never forget the apparently brilliant results following the treatment of a young girl for a grave form of nephritis, when he still was a medical student. The efficacy of the treatment, however, was rendered somewhat doubtful by the discovery of numerous spermatozoa in the patient's urine. There were also tube casts and albumin, characteristic of her disease, which were found to be present in undiminished quantities.

It is the law that he who gives greatly of himself to life in love and kindness and sympathy receives back tenfold what he gives; while he who demands all as by divine right, is denied in exact proportion to his demands.

A NOVEL VIEW OF ACIDOSIS

Sweltering through a summer doubly hot, in contrast with last-year's coolness, weakened to a marked degree by perspiration, with its consequent loss of the saline elements of the blood, we were suddenly reminded of a friend who had stood us in good stead under similar conditions—Horsford's acid phosphate.

In years gone by, advertisements of this preparation could be found in the pages of almost every medical journal of standing, but for a very long time these scarcely have appeared in print. Probably the reason for this was the substitution of another preparation, known as compound phosphoric acid mixture, which had been advised by certain authorities. We well remember when this latter preparation first was advocated. We prescribed it, but when the retail pharmacist charged for it exactly double the price that he had formerly received for the original our interest in it declined.

Then it happened that we discovered a bottle of Horsford's phosphate upon the shelves of a neighboring pharmacy, and we

and members of the family began to use it, with relish and benefit. But, just as we were beginning to congratulate ourselves upon the new acquisition, we received a number of *American Medicine*, which was devoted entirely to the subject of acidosis.

Acidosis! Reading the article, our eyes were opened to the terrible mistake we were making. Our great blunder in using this acid had been detected and, yet, not only were we partaking of the acid phosphate, but we had incurred the fearful risks entailed by pouring vinegar on our salads and squeezing lemon-juice on our sardines. How *could* a doctor be so thoughtless! How could our professional predecessors possibly have fallen into the error of finding an increased percentage of cures of typhoid fever, when an acid was systematically administered in all such cases? What were we thinking about when we administered the tincture of chloride of iron, with its content of the powerful hydrochloric acid, and prescribed this same acid, together with pepsin, habitually for every patient who showed feebleness of stomach-digestion?

Evidently we have been wandering, child-like, along the brink of a yawning precipice. And how it has happened that we did not tumble over is one of those mysteries that no man can fathom. Really, we should be tempted to revert to the ancient belief that some angel-hand was keeping us away from the perilous brink, were it not for a well-founded conviction that the celestial section of the supernatural world had long since given us up as a bad job and that the only immaterial beings concerned in us would probably have given us a sly shove.

From the one hundred or more pages of the excellent number of *American Medicine* referred to, we learn that the science of medicine has been reduced to such a degree of simplicity that it seems incapable of further advance in this direction. Etiology and therapeutics, we are told, at last are established on a firm basis. The cause of disease is, acid; the remedy is, soda. Why need we worry about the habits of our patient, the hygienic condition of his environment, whether he uses tobacco or alcohol or drinks no water? Why not wait until the patient is a walking cesspool and let the raging bacterium rage until it gets tired? These things are of no consequence whatsoever. No matter what may be the complaint of our patient, just hand him a big rectangular package, imprinted with the device of an arm holding a sledgehammer, and tell him to whack

away at it until the last fell molecule of acid is exterminated.

We knew before that in saccharine diabetes the presence of acidosis is fraught with the greatest of dangers. We now learn that excessive vomiting in a child is due to the same cause. The child in the mother's womb is not safe against it, since the toxemia of pregnancy is a result of acidosis. The surgeon blames acidosis for spoiling the results of his operation, but, singularly enough, has not yet devised a surgical stunt for its removal. The most disastrous maladies affecting the human brain as well as the most exasperating affections of the skin are to be attributed to the same source. It is the peril of the anesthetist; it snuffs out the breath of life from the asthmatic; to it is credited the grouchingness of age. The piteous lacrimation of the hay-fever victim is nature's plea for soda. The convulsion of the epileptic is a visual protest against this arch-enemy burgeoned on the nerve-centers. The remarkably high cost of living of the past year or two, which has induced so many of our colleagues to forego a new summer outfit this season, should be directly attributed to the European war and the enormous consumption of acid required to carry on modern warfare. The great ferocity of the world-conflict undoubtedly is due to the fact of its being waged for the possession of the famous springs of Vichy, the principal source of soda for the eastern world.

We have simply skipped over our subject, touching airily a few of the higher points, but would suggest to our readers that they secure a copy of the number of *American Medicine* in question and in an hour's time appropriate to themselves an epitome of modern pathology. Were one financially qualified, he might first go out and corner the visible supply of the alkali, before the information contained in this remarkable magazine shall have become public property. One desirable result might be, to establish a market for the surplus alkali of the western plains in which the soda-salts predominate.

More seriously: returning from his last European trip, Doctor Talbot spoke to the present writer of the enormous popular use made in France of soda, and of the many ways in which this substance is being prepared for palatable taking, and offered, not only at pharmacies, but by grocers, in tablets, effervescent combinations, and other forms. The advance of science frequently reveals to us the true underlying reasons for popular habits, and this holds good as to soda.

The laboratories have demonstrated some

astonishing powers residing in this alkali, in its capacity of sustaining and stimulating the vital forces, as opposed to the paralyzing influences of magnesia. This action can not be attributed to any neutralization of a blood-acid; for, Crile has shown that acidemia is an impossible condition, and that we should speak rather of a more or less pronounced sodium-deficiency. Sodium is a nutrient substance, an essential element of the body, and not to be looked upon as a drug. This explains the constantly growing demand for a certain effervescent form of alkali, which as we are informed by its manufacturer, was introduced a few years ago and was not pushed by advertising, but was just left to sink or swim, as its merits developed. The demand for this preparation may, consequently, be taken as the legitimate verdict of the medical profession upon its applicability, and this demand has grown to almost incredible figures. One might ask whether the remarkable showing made by the French in the great war may not be attributable to the free general use of soda—but nobody who has watched the work of France since 1871 needs any explanation of their prowess.

As a matter of fact, the vegetable acids really promote blood alkalinity, and the citrus-fruits are most efficient remedies for acidosis. It is doubtful whether the so-called acid phosphate acts like the other mineral acids, for, clinically it seems to belong to the vegetable-acids group. If so, we are vindicated and may jubilate over the fact that our observations on the value of phosphoric acid are, in truth, harmonious with the trend of modern opinion, as shown in the journal whose fine presentation of the acidosis-matter forms the basis of this screed.

The day has come when the physician should look upon the patient, not as an ignorant child, but as a human being endowed with more or less natural intelligence, as one, in fact, who has the right to demand an explanation of the way certain effects follow certain causes.—Lawson Brown.

THE CHEMISTRY OF FOOD IN RELATION TO NUTRITION

The role played by the various saline constituents of the food at last is being determined with scientific accuracy. To Almroth Wright, we owe direction of professional attention, universally and powerfully, to the symptoms traceable to calcium starvation. Salt (NaCl) plays a very peculiar part. Essential as it is, under some circumstances, this familiar table-condiment becomes a danger. Inject into the veins a salt-solution

isotonic with the blood-serum, and the kidneys at once begin to let slip through the sugar held in the blood. But, if to the chloride-solution we add a little of potassium, magnesium, and calcium salts, much larger quantities of the sodium-salt may be injected into the veins without inducing glycosuria. Then, what is required is, a "balanced ration" of the mineral constituents.

Remove a turtle's heart, place it in a moist, warm container, and it will continue to beat for hours. Immerse it in an isotonic solution of sodium chloride and it soon ceases to beat. Then add a little calcium-salt solution and the beating is resumed. Push the calcium, and the diastole weakens, until the heart stops in systole. Then we can start it again by adding potassium, but, by increasing the dose, we finally stop the heart in diastole. One almost incredible point brought out in the studies being conducted at the University of Wisconsin is that the experimental animal was not able to adjust the proportion of mineral constituents in the food, so as to escape injury, to anything like the extent commonly assumed.

Another exceedingly important observation in these investigations was that by which it was determined that wheat-grain and straw contain a principle that is poisonous to cattle and hogs. Neither organic fats nor saline combinations sufficed to overcome this toxin. It was established that this toxic principle exists in the oil of the germ, and that the germs freed from this oil are harmless. The inorganic elements of the wheat-germ required the addition of salt, when the special factor represented by butter-fat was deficient, before growth would start. This is why we must butter our bread.

A further significant observation was made, namely: when, to fat-free wheat-germs, dextrinized starch, butter-fat, and the proper salts, were added, growth took place at an almost marvelous rate; the mixture containing only one-third of the protein when the entire wheat-kernel is given. The wheat-germ is rich in nuclein, and this is not contained in the oil. That a preparation of wheat-germ containing the nuclein should stimulate the vital processes, as shown by a growth almost marvelous, is no surprise to those who have become familiar with wheat-nuclein therapeutically.

An admission for which we are scarcely prepared is that of Prof. McCollum, to the effect that no laboratory manipulation can determine the nutritive value of any food, but that it must be tried "on the dog."

To make it a perfect food, polished rice not only requires the addition of protein, butterfat, and salts, but the water-soluble "B" factor, as found in wheat-germs must be present. Here is a suggestion for the devisers of baby-foods.

All grains lack the peculiar factor "A" present in the fats of eggs and butter, but which is especially abundant in alfalfa. The water-soluble factor "B" also is abundant in alfalfa-leaves. Young animals were grown to normal size on a mixture of alfalfa-flour, 40 percent, and polished rice, 60 percent.

Eward, of Iowa, had good success in feeding pigs on the cafeteria plan—letting them eat what their appetite preferred. But, McCollum's rats did not grow anywhere near as well as those for whom the food was selected paternalistically. Even the monotony of a diet of 50 parts corn, 30 parts alfalfa-flour and 20 parts cooked peas did not impair growth or reproduction. Ergo: the animal does not select as well, by instinct, as does the scientist from knowledge.

The late Doctor Sudduth went to much pains and expense to introduce alfalfa as a food for man. He gave a dinner here, in which every dish contained alfalfa as a component or a flavor. He also increased the nitrogenous principles of the plant by careful selection and propagation. His work was but just beginning to bear fruit when unfortunately, he was carried off by pneumonia (the fatal outcome being determined, undoubtedly, by an organic heart malady which he had had for many years).

The preliminary steps have been taken, what now remains is, for the commercial handlers to introduce alfalfa in forms available for human use and then by judicious publicity to render the public familiar with it. The observation, above quoted, of the sufficiency of mixtures containing this forage may serve for a guide.

We look to see alfalfa-flour adding materially to the world's food supply, increasing the growth of the young and the reproductivity of the adult, while at the same time it solves the question of the increasing cost of living, by presenting large quantities of nutritious pabulum, produced at a cost of about one-fourth of a cent per pound. Attention, O ye capitalists!

CHLORAL—IT HOLDS ITS OWN

Despite the constant appearance of new hypnotics, the oldest of all of them, chloral hydrate, still holds its own. In fact, we

have heard experienced clinicians express the conviction that not one of the newer introductions equals this old standby.

A recent French writer, Martinet, comes out boldly in defending chloral against what he claims are erroneous charges made against it and have led to its neglect. Thus, he thinks the warning against the use of this agent in the presence of heart trouble is unwarranted. The prevailing impression concerning its dangers he ascribes to the results of experiments when toxic doses were injected into the veins of animals. As a matter of fact, depression of the heart-muscle does not occur until enough chloral has been given to depress dangerously the respiratory and cardiac centers. Many patients have taken an ounce of chloral a day, without the circulation being influenced injuriously. Tolerance has not been found to result when chloral had been administered daily for prolonged periods.

The chronic toxic action of chloral is especially exerted upon the nerve-centers, those of the vasomotors; but not upon the heart. Martinet finds that the combination of chloral with the bromides is employed by very many physicians for the relief of general spasm and that of the blood-vessels, especially when connected with high vascular pressure, whether there is insomnia or not. Brunton has suggested that when marked vasodilatation and loss of heat results after the administration of chloral the patient be kept warm.

Martinet also calls attention to the value of chloral when there is a scanty secretion of urine, in the presence of insomnia and high blood pressure, especially when the latter results from nervous excitability, with consequent constriction of the renal vessels. Where the excretion of urine is diminished materially, in certain cases, sleep is induced by chloral, followed, on awakening, by an abundant flow of urine, and also a sense of wellbeing, relaxation of the nervous system, and improvement in respiration. The drop in the systolic blood pressure, which may attain 30 or 40 millimeters, is coupled with a corresponding fall in the diastolic tension; thus showing a peripheral as well as renal vasodilation.

Pilocarpine has been used in doses so large as to cause constriction of the renal vessels, arresting the flow of urine; then a small dose of chloral has overcome this difficulty. We believe that the combination of chloral and caffeine often is of value as a diuretic.

A contraindication to the use of chloral is found in vascular asthenia of nervous char-

acter, with low blood pressure and somnolency, whether the urinary output has been reduced or not.

While instances of poisoning from chloral are not common, yet, they undoubtedly occur in practice, and more than one good clinician has been terrified by the sudden appearance of collapse following even very moderate doses of this drug. This has been ascribed to the formation of some other and more toxic substance, through the action of the digestive fluids on the chloral; or, more probably, to its combination with other remedies, for, we think that chloral has been one of our most abused drugs.

As a rule, these artificial chemical compounds should not be prescribed with each other or with remedies of other classes. Their chemical reactions and their action are, by no means, certain and disaster may result from a combination of remedies which, taken alone, are harmless. The tendency to polypharmacy is so great in the profession, however, that giving single remedies with a distinct purpose is almost unknown.

Despite the able presentation in favor of chloral by our French colleague, which the reader may find in abstract in *The New York Medical Journal* for July 29, the present writer has little use for chloral. The clinician who has studied insomnia and its factors, and the high blood pressure, will have more directly effective remedies in gelseminine and the other vasorelaxants. This writer has not prescribed a dose of chloral for years, but it happens that his supply of gelseminine requires constant renewal. He does not see how it would be possible for any person at all fit to administer medicines to do any harm with gelseminine. In the case of veratrine the irritability of the stomach occasioned by it is so great as automatically to stop its administration long before the point is reached when it might depress the circulation injuriously.

Gelseminine is one of the surest and most manageable of drugs. The present writer has given many thousands of doses of it and has yet to see any ill consequences, immediate or remote, occurring from its use. He always has administered these remedies singly, because the indications for them are so clearcut and precise that there is no excuse for polypharmacy. It appears that gelseminine probably is indicated twenty times more frequently than veratrine, the latter being a very powerful remedy, usually held in reserve and being used in cases that are not easily controlled by gelseminine.

Leading Articles

The Alkaloidal Phosphotungstates

A New Class of Alkaloidal Salts

By CARL NIELSEN, PH. C., Chicago, Illinois

A New Class of Alkaloidal Salts

THE powerful active principles derived from plant-drugs are, as a rule, administered in the form of soluble salts. These compounds, as also the basic alkaloids themselves, very often possess a very bitter taste, while some of them will produce irritation of the stomach-wall even in therapeutic doses. Thus, for instance, emetine, one of the most valuable active principles, can not, as we know, be administered practically in full dosage by mouth—either in the form of the pure alkaloid or of the hydrochloride, or of another known soluble salt, because of its pronounced irritant action upon the gastric lining, which causes the patient to vomit it up before it has had time to produce the desired effect. Other active principles, quinine and strychnine, for example, are so extremely bitter that the patients, especially children, refuse to take them in uncoated tablets or in solution.

These highly undesirable properties of a large proportion of our potent alkaloids have been recognized for years and many attempts have been made to remedy them, but without real success. It was with these facts in mind that I took up, some months ago, the study of the phosphotungstates.

Phosphotungstic acid has been known for many years as a reagent for alkaloids, with which it forms insoluble or at least practically insoluble combinations. But not only alkaloids react in this manner with phosphotungstic acid; it has been in use in chemical research as a means of separating organic principles of different chemical nature by the precipitation of some of them as phosphotungstates, as, for instance, the active amines in ergot, the glucosides of various plants, and the active substances of the pituitary gland. In the manufacture of betaine (trimethylglycocol), this latter substance is separated by precipitation with phosphotungstic acid.

The Alkaloidal Phosphotungstates as Medicinal Agents

In view of the property of phosphotungstic acid to form insoluble or practically insoluble combinations with almost all the active principles of the plant-drugs, and as most of these phosphotungstates are tasteless (or practically so), insoluble in dilute acids and easily decomposed by alkalis, the possibility of using them in medicine was investigated.

The first three phosphotungstates to be studied were those of emetine, quinine, and strychnine. These three compounds are all insoluble in water and in dilute acids. When administered by mouth, they pass the stomach unchanged, but upon entering the duodenum they are gradually decomposed during their passage through the intestinal tract as the various alkaline secretions act upon them. The alkaloid is set free and at the same gradual rate absorbed through the intestinal membrane, together with the soluble salts of the phosphoric and tungstic acids (presumably mainly sodium phosphate and sodium tungstate) that are formed at the same time.

When alkaloids are thus administered as phosphotungstates, they exert their full physiologic action, without causing any unpleasant effects upon the stomach. However, before the phosphotungstates can be used in medicine, it remains to be seen whether the mineral tungstates formed in the intestinal tract are, in any manner, harmful to the system or interfere with the action of the active principle itself.

Below is a report on the preliminary animal experiments conducted with the three alkaloidal phosphotungstates in question.

Emetine Phosphotungstate

The phosphotungstate of emetine contains approximately 19 percent of emetine, 3.7 grains of emetine phosphotungstate equaling

in emetine content 1 grain of emetine hydrochloride. It is a fine pinkish-gray tasteless and odorless amorphous powder, insoluble in water, dilute acids, alcohol, and ether. Alkalis decompose it, precipitating the free alkaloid, under formation of the soluble tungstates and phosphates. It is also decomposed by concentrated sulphuric and nitric acids.

ANIMAL EXPERIMENTS, SERIES 1

Dog No. 170. Weight, 20 pounds; male.

Oct. 1.—1 grain emetine phosphotungstate, orally; no visible symptoms.

Oct. 2.—2 grains emetine phosphotungstate, orally; no visible symptoms.

Oct. 4.—8 grains emetine phosphotungstate, orally; no visible symptoms.

On October 7, the dog was anesthetized with trichlorbutylalcohol and prepared for a blood pressure test. The solution for testing was prepared by dissolving 2.52 Grams of phosphotungstic acid in 5 mils (Cc.) of water, neutralizing with sodium hydrate, and adding sufficient water to make a total of 9 mils (Cc.). Of this solution of sodium phosphotungstate, 1 1-2 mils (Cc.) corresponds to 0.42 Gram of phosphotungstic acid; which, again, corresponds to 0.5 Gram of emetine phosphotungstate (7.2 grains)—a relatively large dose if administered internally, and certainly very large for intravenous injection.

The dog was given an injection of 1 1-2 mils (Cc.) of the above-mentioned solution into the femoral vein. The blood-pressure rose immediately, and continued to rise until it was 54 mm. above normal. It then fell gradually during an hour and a half, when it was again normal.

Dog No. 172. Weight, 38 pounds; male.

Oct. 16.—1 grain; no symptoms.

Oct. 17.—1 grain; no symptoms.

Oct. 18.—1 grain; no symptoms.

Dog No. 173. Weight, 20 pounds; male.

Oct. 16.—1 grain at 8 a. m. 1 grain at 12 m. 1 grain at 5 p. m.; no visible symptoms.

Oct. 17.—1 grain at 8 a. m. 1 grain at 12 m. 1 grain at 5 p. m.; no visible symptoms.

Oct. 18.—1 grain at 8 a. m. 1 grain at 12 m. 1 grain at 5 p. m.; no visible symptoms.

The dog was bled to death. Postmortem examination: Stomach practically normal; intestines also normal, except the lowest portion, where the mucous membrane showed a slight hyperemia. Kidneys were slightly congested. Bladder normal.

Dog No. 174. Weight, 21 pounds; male.

Oct. 19.—3 grains at 8 a. m.; no symptoms. 3 grains at 12 m.; slight attack of vomiting at 1 p. m. Fed at 3 p. m. Vomited approximately one-third of the food at 4:45 p. m.; peristalsis at same time. 3 grains at 5 p. m.; no symptoms.

Oct. 20.—3 grains at 8 a. m.; slight attack of vomiting at 8:30. 3 grains at 12 m.; no symptoms. Given a little food at 3 p. m.; neither vomiting nor diarrhea followed.

The animal was bled to death the next morning. Postmortem examination: Stomach practically normal; hyperemia of the intestines, except of the colon, which was slightly irritated. Bladder slightly irritated. Slight congestion of the kidneys.

Dog No. 176. Weight, 30 pounds; female.

Oct. 19.—7 grains at 9:30 a. m.; vomited once at 1 p. m.

Oct. 20.—7 grains at 9:30 a. m.; vomited once at 10:50 a. m.

The dog was given a larger amount of food than usual at 3:00 p. m. on both days. Neither vomiting nor diarrhea followed the meals.

The dog was bled to death. Postmortem examination: Slight hyperemia of the lower part of the stomach-wall and the intestinal tract down to the cecum. Enteritis of the cecum and colon. Pronounced congestion of the kidneys. Bladder-wall markedly irritated. (Found to be chronic and not due to the drug).*

Dog No. 177. Weight, 30 pounds; male.

Oct. 20.—Given 7 grains of phosphotungstic acid, in a gelatin capsule, by mouth. Vomited ten minutes after this dose, and a second time twelve minutes after the dose.

Dog No. 178.—Anesthetized with morphine sulphate and trichlorbutylalcohol and prepared for blood-pressure test.

One gram of phosphotungstic acid was dissolved in 10 mils (Cc.) water, neutralized with sodium hydroxide, and sufficient water added to make a total of 15 mils. One mil of this solution was injected into the femoral vein. This dose caused a rise of blood-pressure of approximately 20 mm., which was sustained for only a few minutes. As soon as the blood-pressure had become normal, both vagi were cut, then the dose was repeated. This second dose caused a still higher rise of blood-pressure. It is, therefore, probable that the tungstate of sodium acts peripherally, by stimulating the

*The postmortem examinations were made by Dr. C. A. Zell, pathologist of The Abbott Laboratories.

sympathetic nerve-endings and contracting the muscular walls of the blood-vessels. Its action is, presumably, somewhat like that of the barium salts. This point will be investigated further.

Judging from these results, phosphotungstate of emetine, when administered orally, in therapeutic doses, causes no discomfort, no irritation of the stomach and intestines, no vomiting or diarrhea. Both phosphotungstic acid and emetine are powerful emetic agents when given separately. In combination, they lose this action, because the salt phosphotungstate of emetine is insoluble in water and dilute acid and passes the stomach unchanged. Very large doses of this emetine compound produced vomiting in some dogs but not in others. The attacks, however, were slight and nothing as compared with the violent vomiting caused by correspondingly much smaller doses of emetine hydrochloride, and they were diminished or entirely avoided when the animals were given only little or no food during treatment.

The more or less congested kidneys in all of the dogs examined after treatment, and the slight irritation of the bladder in some would seem to indicate that the phosphotungstic acid is excreted, partly or entirely, with the urine.

Analysis of Stomach Contents After Oral Administration of Large Doses of Emetine Phosphotungstate

Two female dogs, weighing approximately 15 pounds each, were chosen for these tests.

Nov. 5.—The dogs were given, by mouth, 2 grains each of emetine phosphotungstate, in a gelatin capsule, on an empty stomach. Exactly one hour after this dose, the stomach of each dog was washed out with distilled water and the contents gathered in a flask and tested separately.

Method of testing: The contents were rendered alkaline with ammonia and shaken frequently during a period of approximately one hour. The mixture was poured into a separatory-funnel and shaken with ether, which would dissolve the alkaloid emetine precipitated by the ammonia. The ether-extraction was filtered, the ether evaporated at room-temperature, and the residue taken up with dilute hydrochloric acid. This solution was shaken with ether, so as to free it from fatty and other substances, again separated, then filtered. A small sample was tested with Mayer's reagent, the remainder evaporated to dryness on a steam-bath, then tested with molybdic acid in concentrated sulphuric acid.

Result: Both stomach contents gave negative reactions.

November 8.—The dogs were fed at 3 p. m., and five minutes after the meal each dog was given 2 grains of emetine phosphotungstate, in a gelatin capsule, by mouth. Exactly one hour after this dose, the stomach of each dog was washed out with distilled water, the contents were gathered in separate flasks and tested according to the method described above.

Result: Both stomach contents gave negative reactions.

Thus, emetine phosphotungstate, when administered internally to dogs, either on an empty stomach or shortly after the meal, leaves the stomach and enters into the intestinal tract in less than one hour.

According to these results, emetine phosphotungstate would seem to be a desirable preparation for internal emetine-treatment.

Emetine phosphotungstate offers the following advantages: It is tasteless; it causes no gastroenteritis, no vomiting and no diarrhea when administered in therapeutic doses. The small amount of phosphotungstic acid introduced into the system with therapeutic doses of emetine phosphotungstate apparently causes no harm whatever.

Quinine Phosphotungstate

This salt contains approximately 16.34 percent of quinine. 4.65 grains of quinine phosphotungstate corresponding in quinine content to 1 grain of quinine sulphate, U. S. P. It is a fine yellow odorless amorphous powder. When applied to the tongue, it is first tasteless, but gradually a bitter taste develops. An addition of sodium chloride diminishes this bitter taste considerably. Solubility and chemical properties are the same as those of emetine phosphotungstate.

ANIMAL EXPERIMENTS, SERIES 2

Puppy, male, weight 10 pounds. Received 4.65 grains (corresponding to 1 grain quinine sulphate), in a gelatin capsule, three times a day for ten days. There was no visible change in the condition of the animal during or after this course. The result of this experiment would tend to show that relatively large doses of phosphotungstic acid can be administered in the form of this or similar insoluble compounds, without causing undesirable effects. This young puppy received the amount equivalent to approximately 3.9 grains of phosphotungstic acid three times a day for ten days, or a total dose of approximately 117 grains

The results of the animal experiments mentioned in this preliminary communication are, of course, not sufficient to guarantee a harmless and nontoxic action of the phosphotungstic-acid radical in the insoluble combinations of this nature, but they point toward the possibility of its advantageous use in medicine and encourage further experimentation (feeding and other experiments).

Strychnine Phosphotungstate

Alkaloidal content 23.9 percent, 3.26 grains of strychnine phosphotungstate being equivalent in strychnine content to 1 grain of strychnine sulphate. It is a fine light pinkish-brown odorless and practically tasteless amorphous powder. Solubility and chemical properties are the same as those of the emetine and quinine salts.

ANIMAL EXPERIMENTS, SERIES 3

In order to compare the toxicity of the strychnine phosphotungstate with that of the sulphate, these two salts were administered by mouth in proportionate doses to a series of frogs and, later, to dogs. The frogs received the doses in the form of a small tablet (1-2 grain) made of a trituration of the salt with milk-sugar in the exact proportions. The dogs received the pure salts in gelatin capsules.

I. Experiments with frogs recently caught

STRYCHNINE SULPHATE

Weight of frog	Dose Gm.	Onset of tetanus minutes
30 Gm.	0.002	2
30 Gm.	0.001	24
30 Gm.	0.001	13
30 Gm.	0.0005	35

STRYCHNINE PHOSPHOTUNGSTATE

Weight of frog	Dose Gm.	Onset of tetanus minutes
30 Gm.	0.00326	90
30 Gm.	(cor. to 0.001 sulphate) 0.00163	180
30 Gm.	(cor. to 0.0005 sulphate) 0.00163	200
30 Gm.	(cor. to 0.0005 sulphate) 0.0008	4 hours
30 Gm.	(cor. to 0.00025 sulphate)	

II. Experiments with frogs kept in a tank for 1 1-2 months during the hot weather.

They were physically in a poor condition

STRYCHNINE SULPHATE

Weight of frog	Dose Gm.	Onset of tetanus minutes
20 Gm.	0.0005	1
20 Gm.	0.00025	5
20 Gm.	0.000125	10

STRYCHNINE PHOSPHOTUNGSTATE

Weight of frog	Dose Gm.	Onset of tetanus minutes
20 Gm.	0.00163	40
20 Gm.	(cor. to 0.0005 sulphate) 0.0008	60
20 Gm.	(cor. to 0.00025 sulphate) 0.0004	5 hours
20 Gm.	(cor. to 0.000125 sulphate)	

III. Experiments with dogs

Strychnine phosphotungstate 0.01 Gm., administered by mouth to a dog weighing approximately 10 kg. produced only very slight symptoms of increased reflex irritability.

Strychnine phosphotungstate, 0.04 Gm., administered to another dog of approximately the same weight produced severe strychnine symptoms with fatal result.

Dog, male, weight 7 kg., was given 0.021 Gm. of strychnine phosphotungstate (0.003 gr. per kg.) by mouth in a gelatin capsule.

Distinct symptoms in three-quarters of an hour after dose, i. e., stiffness of hindquarters, tremor, increased reflex irritability, and so on. First and only convulsion one and one-half hours after the dose. The distinct symptoms lasted approximately three hours. The dog recovered.

Four weeks later, this dog was given 0.0065 Gram of strychnine sulphate by mouth in a gelatin capsule. This dose corresponds approximately in strychnine content to the dose of strychnine phosphotungstate administered four weeks previously.

Distinct symptoms, 25 minutes after dose.

First convulsion, 30 minutes after dose.

Second convulsion, 40 minutes after dose.

Third convulsion, 55 minutes after dose.

Fourth convulsion, 75 minutes after dose.

Fifth (very slight) convulsion, 2 hours after dose.

Sixth convulsion, 3 1-2 hours after the dose.

The dog recovered.

In conclusion, it may be said with reference to these results, that the strychnine phosphotungstate has a more gradual and less toxic action than the sulphate. Whether this is due to the physiologic action of the phosphotungstic-acid radical or simply to the slow and gradual decomposition of the strychnine phosphotungstate in the intestinal canal, and consequently slow absorption of the strychnine alkaloid through the intestinal membrane, is a question which must be further investigated.

If a new idea requires only twenty years or so, to be appreciated, there is no cause for being discouraged.

The new (?) therapists are just beginning to learn the importance of intestinal toxemia. "The popular present-day name for this condition," says Willson in his admirable paper on "Cardiovascular Poisons," "is intestinal stasis, and the surgeons are manifesting a cordial interest in Jackson's membranes, Lane's kinks, and similar obstructions as its cause. Our grandparents knew better."

The Prevention and Cure of Respiratory Catarrhs by the Administration of Vaccines

The Duration of Artificial Immunity and Its Value

By MALCOLM DEAN MILLER, M. D., Wollaston, Massachusetts

IN THE May, 1915, issue of CLINICAL MEDICINE, there appeared an article giving my experience, up to about the first of the year, with bacterin-treatment for acute and chronic respiratory catarrhs. Since that time, I have had occasion to treat a great many more cases and meanwhile have been able to check up the duration of immunity conferred in most of my earlier cases. The results are of considerable interest.

Some readers may remember that I began the use of bacterins on myself and on a friend, administering about a dozen injections, up to 2 mils (Cc.) a dose, of a mixed "catarrhal combined" stock bacterin. At the end of that time, I was entirely free from symptoms of catarrh, save for occasional secretion from a mass of adenoid. My friend, however, although repeated microscopic examinations showed at first that there remained only a few pneumococci (these disappeared after a few large doses of a plain pneumococcus bacterin), had sufficient nasal obstruction from spurs and deflected septum to keep up a little nasal discharge. Consequently, I sent him to a good nose-and-throat-man, who operated and gave him good breathing-space in both nostrils, whereupon he continued free from catarrhal symptoms for six months. Then he had an acute cold, but this was cured within forty-eight hours by the injection of just one dose of bacterin. Now, after the passage of another six months, he is obliged to use a handkerchief only occasionally—far less frequently than before he received the bacterin-treatment.

My own immunity lasted fourteen months. During that time, I enjoyed complete freedom from even such slight troubles as sensitiveness to draughts. Then, however, I experienced a relapse, and I felt the symptoms of an attack of a severe cold in the head. So I took a dose of 0.5 mil of "catarrhal combined" bacterin as soon as I possibly could. As usual in acute cases, the effect was almost immediate. The cold ceased to develop overnight, as was threatened, and was practically gone in another day. Notwithstanding, I took two more doses of 0.7 and 1 mil respectively, at intervals of a week, and there

was practically no local reaction after the last dose; thus showing a return to immunity.

About five months after that occasion, during September last, I evidently infected myself from a boil, for I then had a "cold" caused by the staphylococcus aureus, but this attack yielded at once to a dose of 400 million of the killed germs of this species. Then again in December I became newly infected, probably from a patient with an oncoming cold who coughed into my face; but, as before, one dose of the bacterin prevented the development of a lasting infection.

Records Show an Immunity of Many Months

Looking through my case-records, I find that all catarrhal patients who had received the bacterin-treatment as long as a year ago last September had enjoyed immunity lasting for from six to twelve months. Sooner or later, however, the immunity has ceased in every instance. As all of these subjects were controlled by constant microscopic examinations, I know that they were quite free from offending organisms in the mucus from nose and throat when they were discharged as cured; consequently, fresh infection from without must have been the rule. One patient discharged himself, against my advice, while he was passing through the stage of increased discharge. I will here explain that this is a condition which I have constantly observed to occur, under massive doses, toward the end of a course of injections. The large doses seem to rout out the deep-seated infection, and, as the vanquished bacteria can be removed from the mucous membrane only by the formation of a mucopurulent discharge, often a great increase in secretion takes place. Invariably, however, if the dosage is pushed to the maximum and persisted in until no longer any local reaction is observed following the injection, the germs finally disappear from the secretion, while the secretion itself becomes normal in amount. But, I must admit, even the patient in question, who quit before that point, became cured, and his nasal condition cleared up without any further treatment, after the lapse of a few

weeks—at least so far as symptoms were concerned.

The most rapid results (i. e., from fewest injections) occurred in the case of persons who did not mind the inconvenience of somewhat severe local reactions following a doubling of the dose (that is, up to twice the recommended amount), repeated once a week. In most cases, the increase was about 0.25 mil (Cc.) at each time, without causing much discomfort to the patient.

The importance of mechanical obstruction as a cause of continued discharge is demonstrated by three cases, still under observation. These patients have spurs, deflected septa, polypi, or other obstruction, and in all there is kept up a constant discharge, which repeated microscopic examinations have proved free from germs since the conclusion of their bacterin-courses. All of these patients will have to go to the rhinologist, for operative work, to insure permanent results.

Those patients who attended to the local treatments faithfully also got well in much shorter time than those who neglected them. This is what we might expect when we remember Wright's caution, that it is necessary to induce local hyperemia, if possible, in order that the products of the action of the bacterin shall be carried to the infected area. The consistent use of the hot alkaline nasal douche is most important.

No less important, however, are the general measures that were emphasized by me in my former article. Nuclein, alone or in combination with the triple arsenates or as the nucleinated phosphates, is needed in practically all catarrhal conditions. Readers of this journal hardly need to be reminded of its efficacy particularly in throat infections. Used at the very onset of a beginning tonsillitis, hourly doses of 4 or 5 minims of the nuclein-solution—the tablets dissolved in the mouth—seldom fail to abort the infection. Nuclein and calcidin, in hourly dosage, constitute the best general prescription for all acute infections of the nose and throat. The additional administration of a single, medium, dose of a good mixed catarrhal bacterin will insure results in those cases which might otherwise develop in spite of the medicine.

Value of a Limited Immunity

What, then, is the value of immunizing against catarrh if the immunity lasts only a year or less? The answer, it seems to me, depends largely upon the patient's idea of values. Some people may feel that it is not

worth the trouble, discomfort, and cost; while others, who have suffered more, and who face the certainty of a constant succession of recurrent colds the year around, would purchase a few months' freedom at any price within their reach. Surely, if one can begin treatment in the autumn and then, by receiving a few injections, go through the winter and spring free from attacks of acute colds, it is worth the cost and temporary discomfort.

Thus, for example, a physician—a friend of mine—has six or eight weeks' respite between attacks, then has an acute cold that lasts two or three weeks under drug-treatment and often incapacitates him so greatly that he has to secure a substitute. Then he gets fit for work again. Yet, this doctor is "afraid" of bacterins. Were this man to receive just once the relief afforded, at the start of an acute relapse, by a timely injection of the bacterin, he probably would come to think—just as I do—that *it is worth* being immunized, and thereafter be reimmunized as often as the protection runs out. It would save him hundreds of dollars paid to temporary assistants; aside, entirely, from his personal comfort.

As for acute colds, I have yet to see a case which did not respond promptly to a single dose, even after the cold had lasted for several days. A second or third dose invariably prevents complications, such as throat or bronchial involvement. Often the immunity from two or three doses is sufficiently marked to prevent the contracting of a second acute cold during the same winter.

The Proper Mixture of Bacterins

Numerous microscopical examinations have demonstrated that it is advisable to stain two specimens of nasal and two of laryngeal discharge, if obtainable. One should be treated with Loeffler's alkaline methylene-blue, steaming over the flame for thirty to sixty seconds; the other, by the Gram method. Examine in a water-mount, to demonstrate capsules on pneumococci and Friedlander's pneumo-bacilli.

Pneumococci are practically always present. influenza bacilli are occasionally seen. Once in a while, a pure culture is encountered. Usually, there are present from three to five different organisms. Consequently, a good mixed bacterin should be kept to hand. This mixed bacterin should be employed in all acute cases, without waiting for a microscopic examination; for the remedial effect is good in proportion to the earliness with which it is administered.

The vaccines in question, because of their local reaction, are valuable for diagnostic purposes and for determining the end point. For instance, I am just discharging a case of ulceration of the cervix uteri and chronic cystitis caused by an old gonorrheal infection and complicated by the presence of colon-bacilli and various pus-cocci. At first, a dose of bacterin caused an intense local reaction. The last two doses caused a slight and no reaction, respectively. Simultaneously the urinary sediment has become free from pus-cells, bladder-cells, and bacteria, and the vaginal mucus no longer shows gonococci, colon-bacilli or pus-cocci.

To sum up, I believe that in all acute infections bacterins should be employed early and in good dosage, and repeated in increased dose as soon as the symptoms grow worse. Thus, for instance, in treating erysipelas, septic hands, boils, and the like, small doses do not hinder the development of the infec-

tion; but large doses check and still larger doses will stop the progress of the infection and cause it to recede. So, when the injection of 100 million of the killed microbes daily has little or no effect, then we must increase this to 400 or even 800 million. This refers to the pus-cocci. The same holds good of some other organisms. In acute gonorrhea, as I have previously pointed out, I have been able to abort within a few days every acute case, that has come to me, with three doses of, respectively, 250, 500, and 1000 million. In chronic cases, from eight to fifteen suitable doses are required, starting with smaller ones, then working up to about the same maximum.

Furthermore, I believe that artificial immunity in respiratory catarrhs should be secured in the fall by all persons subject to recurrent colds. Most of those who experience the relief will be glad to repeat the immunizing course as often as their immunity runs out.

Nonoperative Gynecology

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

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EDITORIAL NOTE.—This is the fourth in the series of articles upon nonoperative gynecology which Professor Rittenhouse is contributing to this journal. This is a topic in which every general practitioner is interested; therefore we believe that every succeeding instalment of this series will be eagerly welcomed by every reader of this journal. Professor Rittenhouse will be glad to answer any questions, and we hope that the series may bring out many comments.

[Continued from the September issue, page 753.]

Sterility

THE causes of sterility are many, among which we may mention the following:

1. The ovaries may be so diseased that they produce no ova or else diseased ones. This is said to occur in some cases of syphilis and of ovarian cysts. It is not probable, however, that the cause of barrenness often lies in the ovaries, for they are organs of great vitality. A very small amount of healthy ovarian tissues remaining after mutilation or disease may be quite enough to produce normal ova. We occasionally hear of a patient who has undergone ovariectomy surprising herself and her doctor by becoming pregnant. A tiny fragment of the ovary had remained behind.

2. The cause of sterility may lie in the fallopian tubes, when they have been occluded by disease, accident or malformation. The barrenness of prostitutes no doubt is mainly due to salpingitis, the result of gonorrheal infection. I am informed that there are

surgeons who do a profitable business in ligating these tubes for women who regard sterility as a very desirable condition.

3. A very common cause of sterility is found in the endometrium itself, when it is in the condition usually called endometritis, but which would be described more correctly as atrophy of the mucous membrane of the womb. The manner in which an impregnated ovum becomes imbedded in a healthy endometrium is quite analogous to that in which a grain of wheat takes root in fertile soil. When, however, an ovum enters a uterus the lining of which is thin, pale, and anemic, its chance of taking root is poor, just like the seed, in the parable, which fell by the wayside and upon stony ground.

4. In some cases, pregnancy is prevented by the condition of the internal os. There may be a stenosis, which renders the escape of menstrual fluid difficult and painful and also prevents the spermatozoa from entering the uterine cavity. The same result may be produced by extreme flexion. When the uterus is sharply anteflexed or retroflexed, the

body and the cervix are at right angles to each other, the effect on the internal os being like that of "kinking" a garden-hose, for example; the passage is occluded.

5. In endocervical catarrh, the plug of mucus may be so tenacious as to prevent spermatozoa from entering the uterine cavity. I believe this to be a rather frequent cause of barrenness.

I have seen it stated that hyperacidity of the vaginal secretion may cause sterility, by killing the spermatozoa before they can make their way into the uterine cavity, and that the trouble can be remedied by using an alkaline vaginal douche just before coition. I have never met such a case or, if I have, I have failed to recognize it.

Sometimes the failure of a wife to have children is the fault of the husband. I believe the percentage of such cases to be very small, still, in an obstinate case of sterility, this possibility should not be overlooked. The semen may contain only dead spermatozoa or it may fail to penetrate sufficiently far into the vagina, owing to premature ejaculation or to hypospadias. For the former condition, little or nothing can be done. The second is not much more promising, although tonics and cold bathing may be of benefit. For hypospadias, a surgical operation should be advised or else artificial impregnation may be tried.

There is another class of alleged causes of sterility, which might be called psychological. The belief prevails to some extent among the laity that a woman will not conceive if she has no passion and experiences no orgasm. But there is abundant evidence to the contrary.

There is also a much more common belief that, while a marriage between two given persons may be childless, yet, both the man and the woman might contract a fruitful union with a different partner, and in corroboration the case of Napoleon and Josephine is quoted as proof. Although it is true that these two royal personages had no children together, while each had issue with a different mate, this does not prove that children were impossible to them. True, they lived together thirteen years; nevertheless, we see cases where a couple live together unfruitfully for more than thirteen years and eventually have children after all.

I had a case in my own practice, where a couple had their first child sixteen years after marriage, and another where the first child was born a year after marriage and the next pregnancy did not occur until eighteen years

later—when the wife tried to make up for her tardiness by presenting her husband with twins. If the first-mentioned couple had been divorced at the end of ten years and had each married again, they, too, like Napoleon and Josephine, they might have been quoted as proof that "affinity," or the absence of it, is a mysterious factor in determining, respectively, fruitfulness and sterility. These two cases of mine suggest a phenomenon which has often been observed, namely, that women who have been sterile during most of the childbearing period sometimes exhibit a revival of sexual activity just before the menopause.

Prognosis and Treatment

The prognosis in female sterility depends greatly upon the etiology, and, since it is impossible always to be certain of the cause, we seldom are able to promise the patient a positive cure.

The first thing that should be insisted upon is, a thorough investigation of the case, both by physical examination and inquiry into the history. This may enable the doctor to form in his own mind some idea as to the probabilities of a cure, but that idea will seldom be definite enough to justify him in offering the patient a rose-colored prognosis. Frankness is best in the long run, and the patient should be given to understand that, while few cases are entirely hopeless, a certainty of cure cannot be promised. In my own experience, success has been attained in over 50 percent, but this includes only such cases as seemed promising enough to start on a course of treatment. The ones that seemed hopeless from the first were frankly told so.

If a woman has had gonorrhea, with or without salpingitis, and has been sterile for several years after, the prognosis is poor.

There is a form of leukorrhea which usually indicates a hopeless case. There is not much discharge, but what there is clings to the vaginal wall in the form of flaky curds. This condition I believe to be due to a form of endometritis in which the uterine mucosa is more or less atrophied. I have never found any form of treatment capable of restoring its activity. In other forms of endometritis, in endocervicitis, in stenosis of the os internum, in flexion either backward or forward, there is always a reasonable possibility that the sterility may be overcome.

Owing to the uncertain etiology, the treatment must often be somewhat empirical, but it should be broad enough in its scope to cover all the contingencies apparent. The

three most frequent indications are: to correct endocervical cararrh, to dilate a stenosed os internum, and to make such applications to the endometrium as will tend to stimulate it to resume normal activity.

If I find present in the external os the characteristic plug of catarrhal mucus, I treat this condition first, as described in a previous article. When the endocervicitis has been controlled, I inform the patient that I am ready for the next step, which will be a month's treatment, beginning about three days after the next menstrual period and repeated every five days until just before the time for another period. At the first sitting, I endeavor to get a dilator through the os internum—of course, under careful asepsis. I begin with the smallest size necessary to effect an entrance without using violence, usually a No. 5 or 6, American gauge. This is about the size of a small wheat-straw. I prefer a steel dilator shaped like the sound used in the male urethra but having less curvature.

When there is no flexion of the uterus and the stenosis is not intense, the size of the sound named can usually be passed, with a little patience, by steady moderate pressure. Regard must be had to the proper direction; that is, it must be ascertained whether the uterus is anteverted or retroverted.

I should have stated that I use a bivalve speculum, and this helps somewhat to bring the uterus into line. I much prefer using the speculum to introducing the sound on the finger without a speculum. The sound is lubricated with euarol (thymol iodide in oil solution). It is easier to keep the dilator aseptic, and easier to tell when it passes the os internum. By winding a few fibres of absorbent cotton around the dilator, 2-1/2 inches from its end, we have a landmark the approach of which to the os externum will announce the entry of the instrument into the uterine cavity.

If with reasonably prolonged effort the sound fails to pass the internal os, I seize the cervix with a tenaculum forceps so as to make counter traction. This may seem rather heroic if done without an anesthetic, but uterine tissue is not very sensitive and, if the patient has been told that she will be hurt some and especially if she has not seen the tenaculum, she will usually not complain. But, if she has caught a glimpse of that instrument, the idea of "putting hooks into her flesh" may be too much for her fortitude. As a matter of fact, the cramping pain caused by passing the dilator through the os internum is more severe than the sharp sting of the tenaculum in the cervical tissue. Where

much flexion exists, the tenaculum is usually necessary—the traction which can then be made helping to straighten the uterus and facilitating the entrance of the dilator.

Once the dilator has passed, it will be comparatively easy to introduce the next size, and perhaps a third. We are then ready for the next step, namely, an application of whatever drug has been selected for the purpose.

I wrap the end of an applicator firmly with absorbent cotton, dip it in euarol and swab the interior of the uterus thoroughly. The manner in which the wrapping is done is of importance, for, if done unskilfully, it may not enter readily, or, still worse, it may strip off the applicator and remain in the uterus. While this accident is not very serious, it may, nevertheless, cause the patient some discomfort and the doctor some anxiety before the cotton comes away. The wrapping which I have found most satisfactory should not be short and thick, but should cover at least two inches of the applicator, uniform and a little thinner than the largest dilator used, very firmly wound, and having only a small brush of loose cotton at the end. I often have to wind several before I can get one to suit me.

Attention to apparently trifling details is the price of success. Euarol for the application has given me good results, and is not as painful as iodine, which I have also used to some extent. When I use iodine, I prefer a saturated solution in liquid petrolatum, in place of the tincture, which latter is so astringent that the swab does not readily pass into the uterus.

When this treatment has been repeated every five days for a month, it should be suspended. Pregnancy may follow the next menstrual period, and to continue the treatment in that case would cause abortion. If menstruation continues regularly after one or two months' observation, the treatment may be resumed for a month, followed by the same period of waiting. I have been successful in some cases after a month's treatment; in others, only after two or three. As a rule, if no results are obtained after three months of treatment, with the above interval between, I advise a curettage (under anesthesia), using a sharp curette, followed by the application of iodized phenol. This will be followed by what is practically a new uterine mucosa, one that is favorable to impregnation, and I have seen success in several cases. If the woman still remains barren, her case is hopeless.

In all cases of sterility, the woman should be told that conception is most likely to occur the first day or two after a menstrual period.

What the General Practitioner Can Do in the Treatment of Chronic Diseases

By GEORGE F. BUTLER, M. D., Kramer, Indiana

Medical Director of the Mudlavia Sanitarium

(Continued from October issue, page 849)

Doctor Meylan's Testimony

DR. George L. Meylan, medical director of the gymnasium in Columbia University, has written very sensibly on rest and recreation as follows:

"All changes from rest to activity or from activity to rest are made slowly when nature is allowed to have her own way. Attempts to change suddenly from inactivity to vigorous muscular work bring on severe distress of the circulation and respiration; rapid eating after a long fast inevitably results in acute indigestion; sudden awakening from sound sleep causes general discomfort; an abrupt change of temperature, such as occurs when jumping into cold water, usually brings on cramps of the muscles, and occasionally causes sudden death.

"Judicious regard for this physiological law is essential to physical wellbeing and efficiency. The common practice of taking a cold plunge-bath immediately after rising is absolutely contrary to the laws of physiology and hygiene. The effect of the cold water is, to stimulate all the body-functions to sudden and vigorous activity and also to dissipate temporarily the sensations of left-over fatigue not removed even by sufficient rest. The exhilaration produced by the bath accelerates the expenditure of nervous energy for a few hours and is followed by a reaction in the form of lassitude and depression. It is far better to allow the various body-functions to change gradually from the relative inactivity of sleep to the full activity of work.

"In order to avoid the dangers of excessive fatigue, sleep is indispensable, but there are other ways of securing rest. Some temperaments derive much benefit from occasional periods of complete idleness, other temperaments, more nervous and restless, get no satisfaction from being idle. Continuous application to one form of work is much more fatiguing to nerve and muscle than is varied work. I have seen business men and students come to the gymnasium, all fagged out from five or six hours of mental work, get into various forms of muscular work with zest and

energy. In a model boys' school, famous for the rapid progress of its students, the boys alternate periods of study with short periods of active play. The principle involved here is, that, by changing from mental to physical work or from one form of mental work to another, the individual is able to accomplish a larger amount of work with less fatigue than by working continually at the same kind of work.

"One of the most salient characteristics of our modern life is, the increasing amount of leisure time for recreation made possible by the shortening of working-hours. The advent of specialization, labor-saving devices, the telephone, telegraph, and automobile make it possible for all classes of people to do more work in less time than before. But work is more intensive and consequently more fatiguing. The result of these changes is, a greater need for relaxation and more time available for recreation and pleasure. The proper utilization of leisure time has much to do with health, efficiency, and happiness.

Importance of Play and Outdoor Life

"Play is generally considered as belonging to childhood only, but it is really a vital part of life at all ages. The need for recreation and play is satisfied in various ways. Sedentary workers derive the greatest benefit from outdoor physical recreation, such as golf, tennis, fishing, hunting, collecting, and photography. Leisurely reading of the treasure stores of literature, music, and parlor-games also afford a certain amount of mental relaxation from daily work.

"The outdoor avocation or hobby has more in its favor than any other. It is readily procurable in 'doses' suitable to any temperament or temper and adjustable likewise to the size of any pocketbook. The essential point with most persons is, to make a beginning, and to acquire a desire for acquaintance with the birds, familiarity with the procreation of the wild flowers or the discovery of beautiful bits of scenery that may be reproduced by the camera.

"Many people who realize the importance of outdoor recreation neglect it because they have not formed the habit of making

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use of weekends and holidays for that purpose.

"There are innumerable ways of getting the benefit of outdoor recreation while leading an active city life. Even in New York City, where the conditions are perhaps the least favorable for getting out into the country easily, the problem is solved in various ways. There is a group of professional men who are organized as a fresh-air club. They make up a schedule of walking-trips during the autumn and spring, and skating parties during the winter. They meet at the railroad station Saturday afternoons, ride out ten or twenty miles from the city, walk from five to ten miles across the country or up a mountain, spend the night at some country inn, walk ten to twenty miles on Sunday, and return Sunday evening, invigorated and ready for another week of hard work.

"Another group of my friends go off in a motor boat, either up the Hudson River, down the bay or into Long Island Sound, eat and sleep aboard, and return Sunday evening. Two teachers of my acquaintance spend Saturday afternoon and Sunday canoeing up the Hudson and camping out at some of the many beautiful spots along the palisades, between New York and Peekskill.

"In the vicinity of every city, opportunities for physical recreation are available in the open country, woods, hills, lake or stream. A very essential point to remember in this connection is, that frequent short periods of outdoor physical recreation are far more beneficial to persons working than is one whole month's vacation following eleven months of continuous application.

"The value of frequent outings in the country is not alone beneficial to physical health; the effect upon the mind is equally good. The mind is rested and refreshed by a change of surroundings, seeing new faces, eating different food, sleeping in a strange bed. The worries and troubles are forgotten and the mind regains its elasticity and freshness for clear thinking and efficient work.

"Weekends and occasional holidays serve a good purpose, still, most people need a longer period of rest and vacation about once a year. Those who disregard the need for an annual vacation and work continuously year after year furnish the recruits for nerve-specialists and sanitariums. A story in the newspapers, describing the strenuous life of a young man twenty years old, who by continuous application without any vacation had earned his election to the presidency of a large New York bank, brought him a large

number of circulars from sanitariums for neurasthenics, is characteristic.

"The rapid development of the summer-vacation idea within recent years is the natural result of the increasing demand for intensive mental application in business and professional life. The judicious use of the summer vacation serves to restore the individual to a normal physical and mental state after months of more or less unhygienic living.

"Camping, cruising, touring, and tramping afford the largest amount of recreation and recuperation to tired-out mental workers.

"Summer-hotel life, with its idleness, rich food, and much dressing, strenuous traveling and sight-seeing, is not a desirable form of vacation for sedentary workers. A simple active outdoor life in the country or on the water is far better to restore vitality, revive ideals, and help the individual to live a broad, happy, and effective life."

Indigestion

Imperfect digestion is one of the commonest disturbances to which the human body is subject; nevertheless, science knows but little of its pathology, and, to frame an accurate definition of its precise nature, probably is not possible at this time. The manifestations of indigestion by no means are confined to the stomach, for, often every part of the alimentary canal and the secreting glands connected therewith is involved; while in what used to be designated nervous dyspepsia the origin of the functional disturbance is not in the abdominal viscera at all, but in the higher nerve-centers.

Therefore, for the purposes of medicine, the chronic condition known as indigestion has been broadly divided into two great classes of so-called "dyspepsia"; namely: the one in which there is a deficient secretion of gastric juice, amounting sometimes, almost to suppression; the other, in which there is too much acid in the stomach, due either to the hypersecretion of hydrochloric acid, or to fermentation of the food-constituents and consequent formation of lactic, butyric and acetic acids. Besides these two general divisions, a third one is recognized, although this condition is met with but rarely. Here, the food is retained in the stomach only a short time, passing rapidly through the pyloric orifice into the intestine, where it stimulates peristaltic action and induces a copious evacuation immediately following each meal.

However, for all practical purposes, we may consider that dyspepsia is due either

to a lack of gastric juice or to an inferior quality of the secretion whose peptic properties are impaired, but it is difficult to determine, without resorting to the laboratory, which of these pathological states of the gastric secretion obtains in any particular case.

Without a diet that will furnish the requisite nourishment and at the same time not overtax the digestive powers, not even with the highest medical skill can we hope to effect a permanent cure of "dyspepsia." Sometimes the appetite is perverted and requires to be trained back into normal channels; a course of properly regulated fasting often is conducive to this, and is, in addition, an excellent preliminary measure before a radical change of diet is undertaken.

The Starvation Theory Fallacious

Many persons, having been the "victims" of certain experiments, have the idea that the less one eats the better, and their minds first will have to be disabused of this notion before any progress can be made in restoring them. It is as unwise to go to bed hungry as it is to eat from habit alone, in the face of disinclination. If appetite is lacking, the sufferer should take more exercise in the open air. Improved nutrition brings increased energy, and the patient is not in a satisfactory condition until this sign—increased energy—becomes manifest, even though he may have put on flesh.

A common mistake committed by dyspeptics is, that they attempt self-treatment by cutting off articles of diet, now one and then perhaps another, in that way often diminishing their strength without lessening their trouble. Dyspepsia is serious enough, certainly, to demand the attention of a skilled physician.

How to Eat

The patient should eat slowly, and thoroughly masticate and insalivate the food before swallowing it, a frequent cause of dyspepsia being hurry at meals. A certain time should elapse between eating and the return to work, especially with the dyspeptic. Rest before eating is another important factor, it being especially desirable to rest a few minutes previous to the evening-meal, for this is the time when the stomach and the body in general are likely to be nearer exhaustion than at any other hour.

Although the experience of mankind shows that, as a rule, at least four or five hours should intervene between meals, there are

conditions under which it is better that something should be taken every two hours or so, as, for instance, in fevers, when the waste of the body is highly increased; but, when food is eaten as often as this, it must be in small quantities, otherwise indigestion will follow.

Always rules should be laid down for the patient as to when, how, and what he should eat.

Liquids at Meals

Only very little fluid, or none, should be taken at meals, since the effect of it will be, to dilute injuriously the saliva and gastric juice. Liquids may be taken immediately after the meal, although the best time is an hour before the meal; and it should preferably be plain hot water. This washes out of the stomach the remnants of the previous meal, while much of the water becomes absorbed and thus prevents thirst at the table. Moreover, the water already absorbed makes possible the free secretion of saliva and gastric juice, whereby digestion is accelerated.

An exception to this rule is, that, if the stomach is actually dilated and more especially if this is due to pyloric obstruction, even hot water will remain in the stomach for more than an hour after ingestion and, so, will interfere with digestion instead of promoting it.

Proteids and Carbohydrates

It is a common practice, based on ages of experience, for the English-speaking world to separate the proteid from the farinaceous meals, or else to join them in given proportions, taking the farinaceous part, with only a small amount of proteid, for breakfast; a proteid meal for luncheon; perhaps a little farinaceous food in the afternoon; and another proteid meal in the evening.

Mastication

Always the food should be well masticated. For young persons who have good molars, this is not difficult, but others who have lost teeth should give special attention to this important matter, keeping in mind the fact that, in order to reduce their food to a given state of consistency, they will be obliged to chew it many more times than they used to do. In dyspepsia, it should be insisted upon that all food be masticated until it has the consistency of cream, so that it would pass through a fine sieve without leaving a residue.

The "fletcherizing" of food has its value, providing it is not overdone.

The Body Must be Kept Warm

Special warmth is required in four different places on the human body, namely, the abdomen, the back of the neck, the shins, and the feet, and dyspepsia often is due to exposure of these parts. In cold weather, there is always a draught between the room-door and the heating apparatus, and to sit in this current of cold air often means to acquire dyspepsia—a dyspepsia that is usually laid to some food recently eaten. If one is compelled to remain much in this draught, the feet should be protected by thick shoes, especially those with cork soles, the legs by woolen stockings and gaiters of leather or

cloth, and, if necessary, a high collar or muffler may be worn around the neck. But the best way is, to avoid the draught, when possible.

Abdominal Support

An apron of chamois-skin and flannel, or a belt, should be worn around the abdomen in such a way that it gives support to the body, as well as warmth. Support is especially demanded when the belly is pendulous and the abdominal muscles are lax. The belt may be made of flannel or knitted wool or a still more comfortable one may be made in the shape of a silk scarf, and this should be long enough to wind three times around the trunk. The belt may be provided with a pad or truss in case of floating kidney.

Treatment of Menorrhagia, With Especial Reference to the Use of Mammary Extract*

By W. F. VON ZELINSKI, M. D., Sc. B., Chicago, Illinois

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IN ORDER that you may have a clear understanding of the subject with which I am to deal this evening, I want to present a classification of hemorrhages from the uterus from the standpoint of etiology in a way somewhat different from that found in the usual textbooks, which latter, so far as I have been able to discover, are rather misleading.

Generally speaking, hemorrhages from the uterus are considered under two headings—metrorrhagia and menorrhagia. Metrorrhagia should be classified as a hemorrhage from the uterus having its etiology independently of ovulation and menstruation. Menorrhagia, on the other hand, should be noted as a condition most usually intimately connected with the maturing of the ovum. Irrespective of the duration or intensity of a uterine hemorrhage, even though it last for weeks, when having its etiologic factor in the process of ovulation, it must be considered as a menorrhagia. So far as we know now, normal ovulation induces what we recognize as menstruation, and under normal conditions it controls both the duration and the amount of flow.

I am aware that there are conflicting

theories as to the role played by the ovaries in the induction of the menses. By that I mean, whether ovulation, or development and regression of the Graafian follicle, is concerned, or whether it is owing to an internal secretion from the ovary, a so-called hormone. There is, however, no doubt that the presence of the ovary is necessary for the production of menstruation, irrespective of whether the ovary be in its normal anatomic position or be transplanted to another part of the body.

Of course, I recognize that *a priori* a uterus of normal structure and blood supply must be postulated for the production of a normal catamenia. Deviation from what we consider a normal menstruation for a particular individual brings us to the determination of the various factors that have to be noted in the diagnosis of a menorrhagia. Several must be taken into consideration. Assuming the menstrual flow to be of greater severity or of longer duration than is usual for a given individual, we must determine, first, whether there is an abnormal condition of the uterus, and, second, whether there is a disturbance in the function of the ovaries, or both.

For example: Owing to displacements, subinvolution or other cause, a uterus may be

*Read before the monthly meeting of the Alumni Association of Bennett Medical College.

hyperplastic both in its body and in its endometrium. This is given as one of the most prolific causes of menorrhagia. We may find here, however, that the periods are only of medium intensity and duration, and we may then surmise that this condition has some inhibitory influence on the menstruation-inducing function of the ovary. Although it is a very common occurrence to find a hyperplastic condition in menorrhagia, this alone will not produce the pathological condition under consideration. On the other hand, we may find a most severe menorrhagia in what, to all intents and purposes, is a perfectly normal uterus. Here, of course the assumption would be that we have to do with a disturbance in the ovarian function pure and simple.

Some Objections to Curetting the Womb

I mention this particularly, to emphasize the careful consideration that must be given to the cause of hemorrhage from the uterus. To concentrate treatment on the uterus when it is not directly at fault, it goes without saying, is very irrational. I call attention to this self-evident fact, because we do not have to hark back very far to the time when most cases, if not all, of uterine hemorrhage were treated with the curette; not once, but any number of times within a short period. Often the results were not only nil, but in many instances positively harmful. Acute inflammatory processes were further complicated, while repeated curettement caused the formation of scar-tissue, which later led to acutely painful dysmenorrhea, and, in cases in which pregnancy followed, to difficulties during the puerperium.

Like every other therapeutic measure, curettage has its positive indications. In certain cases of menorrhagia, it must be admitted, it is of value. However, Busse, of Germany, states that lasting results—that is, control of hemorrhage—have been obtained in but 10 percent of cases following curettage. All of us know of innumerable cases that were curetted for hemorrhage from the uterus, irrespective of its cause, with brilliant temporary results, and we also know of many patients who were finally persuaded to submit to a partial or complete hysterectomy. In the case of those who were in or past the menopause, the future effects of such measures were perhaps not so serious, but in the case of the younger patients the final results of such a radical procedure were, for obvious reasons, not so satisfactory, except as they removed the cause of their former

disagreeable symptoms; a case in point where the remedy is worse than the disease.

According to my experience, curettement is of value in chronic endometritis following abortion, in subinvolution (*post partum* or *post abortum*), and in chronic diffuse or polypoid hyperplasia of the endometrium. In such cases, the enlarged and thickened uterus is often restored to a normal or nearly normal vascular organ. Here, the curettage not only removes the diseased tissue but has a stimulating effect and may thus remove the cause of the overstimulation of the ovaries and, of course, in connection therewith or as an aid thereto, all the local applications, such as formalin, silver nitrate, iodine, hot douches, and the internal remedies, such as ergot and hydrastis.

There is another group of cases classified under menorrhagia, to which I would call your attention, namely, those accompanied by acute inflammation. To some it appears that the inflammatory condition of the uterus is the cause of the hemorrhage, although in the majority of instances the exciting cause will be found in a disturbance of ovulation induced by inflammation of the uterine adnexa. These cases, I might mention in passing, must never be treated locally or mechanically, but according to the well-known principles of rest and by means of antiphlogistic measures, such as the application of ice-bags. The usual styptics are of little or no value here.

Among other measures that have been employed in menorrhagia, aside from those I have referred to, I may mention extirpation of the ovaries and roentgenization. I have heard more than one roentgenologist urge the use of the Roentgen-rays in menorrhagia, and cite as examples many cases that they had treated successfully; but there is one thing which I never have heard them mention, namely, that it has been proven experimentally that a fecundated ovule from an ovary previously subjected to Roentgen-rays has produced teratoid births. From this we can see that the application of such treatment should always be guided by caution, because of its possibilities for future harm.

Mammary Extract for Menorrhagia

In the treatment of the conditions discussed, that is, the various groups classified as menorrhagia, we have all felt the need of a simple remedy or plan of treatment, that is, a remedy that will not disturb or cause permanent changes in the sexual organs. To Professor Hoehne, of Stoeckel's clinic at Kiel (from whose writings most of the material for

this paper has been gathered), must be given the credit for working out such a treatment on a scientific basis. I refer to the use of extract of the mammary gland. However, mention of what we might call "mammary therapeutics" was first made in 1896, by Robert Bell, of Glasgow, who proved the physiologic influence of extracts of cows' udders and indicated their therapeutic value.

It seems, from the experience of Hallion and Battuaud and others, that the mammary hormone is antagonistic to the ovarian hormone. Changes in the proportion of these hormones result in disturbances of function. This suggestion is confirmed by the fact that mammary extracts have been used by Hoehne, in more than 50 cases, in conditions where he assumed that there was ovarian overactivity and uterine underactivity.

Pochon states that the administration of the mammary hormone has a tendency to cause uterine depletion, and, according to Battuaud, this form of medication has proved valuable in young girls and in the metrorrhagia of the climacteric. He also speaks of its value in hemorrhages which are the result of uterine oozings during the menopause but not associated with malignant growths.

A number of writers, Hoehne in particular, have called attention to the possibility of diminishing excessive menstrual flow and curtailing its unusual duration by means of mammary extract. It is also asserted to be useful in lengthening abnormally short intervals between the catamenia, restoring the normal rhythm of menstruation in frequency, amount, and duration. Luncz especially credits this method of treatment with remarkable efficacy and emphasizes its absolute harmlessness.

Various Views Cited

According to Harrower, in his "Practical Hormone-Therapy," a study of references to the subject cannot but impress one with the antihemorrhagic and sedative effects of mammary opotherapy in cases of functional overaction of the pelvic organs; still, it should be emphasized that preparations of this character are not styptics, as a study of their physiologic action shows. Indeed, if one were to believe all that is said by Harrower, concerning mammary extract, he would find it recommended for the treatment of uterine fibroids and other pathological conditions which we believe can be handled properly only by surgical means.

Harrower, quoting Feodoroff, mentions a statistical report of the use of mammary

extract in uterine fibromyomata, in which a reduction in the size of the tumor was noted in 53 percent of all cases treated; hemorrhage and profuse menses were controlled in 83 percent; the pain usually present in the development of the tumor was abolished in 40 percent; in only 14 percent was there total failure.

A Personal Experience

I would lend my support to these views, even though my observation were limited to fewer cases. In my own practice, I have had most excellent results in cases of preclimacteric menorrhagia; also in other cases of menorrhagia, of which latter I will mention one example. It is that of an unmarried woman 32 years of age, a cleancut case of ovarian dysfunction, with absolutely no indication of any organic lesion or neoplasm. The patient flowed for two and three weeks at a time, at intervals of two and three weeks. All approved methods of treatment had failed; by which I mean the use of styptics and the curette. Two courses of treatment with mammary extract, 5 grains three times daily for two weeks each time, relieved the trouble in a most satisfactory manner.

I am personally convinced that mammary gland is one of our best remedies for the control of hemorrhage due to ovarian dysfunction, and I believe that it is the best single remedy at our command. However, in my study of this remedy I have found references to its use as an oxytocic agent, several authors reporting that injections of mammine had an undeniably abortifacient effect, and stating it as their opinion that the remedy was contraindicated during pregnancy. A sedative effect has also been reported.

The extract has been suggested as a postpartum agent, to influence increased secretion from the breasts; also for its decongestive effect upon the uterus, in hastening involution and return of the organ to the normal. However, its use as a galactagog does not seem to be sanctioned by experimental work; for, Ott and Scott, of Philadelphia, have shown that, while the amount of milk secreted may be increased for the time being, the total quantity for twenty-four hours can never be augmented by this means.

I present this matter, not only because of my own belief in the efficacy of mammary extract, but because of the very glowing reports of foreign observers, who have had greater opportunity to study the value of this preparation than I have, and because the American medical literature is greatly lacking in this subject.

The Relation of Sexual Weakness to Rectal Disease

By W. F. SCHRADER, M. D., Fort Wayne, Indiana

I have not, at any time, read a conviction expressed by any writer regarding the intimate relationship existing between sexual disturbances and rectal disease, although this is of frequent occurrence, as has been evidenced to me in a brief practice specializing in rectal diseases. I do not believe that it is realized by many to how great an extent an irritation in the rectum may be responsible for some sexual variance from health and how often it is entirely overlooked in the treatment.

The most common sexual weaknesses complained of by men leading temperate lives, and who have not at some time in the past been either unwise or unfortunate in paying devotion at the shrine of Venus, are, in many instances, in some way attributable to a rectal disorder, as I have found by investigation.

During the last five years leading up to my graduation in medicine I put in from one to three hours of each school-day teaching in the literary department of schools where the majority of the students were young men. I was perhaps brought into closer contact with the members of my classes than is usual between teacher and pupil, because I myself was in my early twenties. The personnel of my classes changed with each semester, yet, acquaintanceship with a great many of these young people continued to the completion of their full courses of study. Quite a number of them made of me their confidant and came to me with their tales of broken hearts or infected bodies, and for advice in various matters of importance to a student.

A number of them worried about having too frequent nocturnal emissions, others complained of lack of control of their passions and consequent embarrassment at times, some of aggravating erethism, while in a few instances incapacity for the sexual act was confessed, although they were sure normal conditions prevailed theretofore and no history of disease, overindulgence or abuse had intervened.

At that time, I began to wonder why these young men, none of them "sports," and many from the farms, where it is supposed the healthiest and strongest are found, should be troubled with such weaknesses as were related to me; for, at that time, I knew little more than they about such conditions, and liter-

ature on sex matters wasn't found almost anywhere, as it is today.

After beginning the study of medicine, the number of these complainants increased, and they included older men, some of them married. Then I became more interested in this question.

After my graduation, I was appointed assistant demonstrator in the dissecting room, and I took particular interest in the dissection of pelves; for, I had been encouraged to make proctology a special study by an old gentleman, a pioneer physician who had purchased the right to use in a certain territory the Brinkerhoff pile treatment. He had a big patronage and frequently called me to see some special case or to assist when he needed help. I do not know that he ever inquired as to other ailments of his patients, but a few of them confided to me their sexual conditions and asked whether they could be caused by the piles.

Later, I recalled that a number of my confiding pupils at college had at times told me of blood losses at stool, of rectal protrusions, and of itching, and had diagnosed the presence of piles.

Sexual Trouble in 80 Percent of Rectal Cases

After four years in practice, I took a short course in proctology and then a special course a few years later, but continued in general practice until five years ago, since which time my work has practically been limited to rectal diseases. Consequently, my experience has not been one of great extent, but I have kept careful memoranda and a history of each case treated in these and the earlier years of practice and in preparation for this attempt to write a paper of interest to the readers of one of the best journals of its kind to be found in any country. I was not greatly surprised, because the evidence presented itself so frequently, to find that more than 80 percent of my rectal patients also had some form of sexual trouble.

This list does not include women; for, obviously, it is a more delicate matter to obtain such facts from the women. However, because of the data obtained in a few cases where intelligent, well-educated women were concerned, who appreciated the reason for

my questions, I have no doubt that similar conditions exist in women as well.

In the treatment either of the rectal or sexual class, you are not likely to learn of an accompanying condition unless you question the patient closely. Very rarely have I been told voluntarily of a sexual weakness along with that from which they sought relief.

The reason for this is, the false modesty that so long has obtained, particularly among Americans, about speaking of these parts of our anatomy, as also that so very few persons have a true conception of what normal sexual health should be or the proper functioning of the rectum in health. I believe that the study of sexual and of rectal diseases should go hand in hand and that the physician who specializes in either branch should fit himself to treat intelligently the cases of both.

When we consider the gross anatomy and the contiguity of the sexual organs to the rectum, the intimate interweaving here both of the circulatory and the nervous system supplying them, along with the very evident reflex influences one disordered organ exerts upon another throughout the body, it hardly can be otherwise than that both are impaired if any abnormality exists in either of them.

Perhaps I can not in any other way make plainer the reasons for my belief in the existence of such close relation in these ailments than by giving brief accounts of some cases treated and the results obtained. It would prove tedious should I here enumerate the therapeutic measures adopted in each instance, but, if I succeed in awakening sufficient interest in any reader to cause him to request the same, I gladly shall reply and offer help from my limited experience.

Persons afflicted with hemorrhoids other than that most painful variety, the thrombotic, seldom call for professional care until after home-remedies and advertised cures have been given trial, a period of months and perhaps years having elapsed in nearly all cases.

What Experience Has Revealed

In taking the case history, on my inquiry as to any sexual symptoms, maybe with looks of surprise and shamefacedly some will admit inability to maintain erection throughout copulation for some time past, and this gradually having grown worse up to the time of the examination. Thus, one man told me he had been wholly incapacitated for five years, another gave such a period of more than two years, and both said that in these years there

were times when desire became so tantalizing as almost to unbalance reason. They had taken aphrodisiacs, had had electric treatments, massage, and had even resorted to unnatural methods and mechanical stimulation, but without any restorative effect.

The number of the tumors or the state of engorgement in neither of these cases was so great as is sometimes seen, yet, their existence covered a period of several years. However before the tumors had entirely disappeared, in each case an improved sexual condition was observed, and this continued, until capacity and potentiality were restored within three months after completion of the treatment, and there has been no subsidence in either case after periods of thirty-eight and thirty-three months, respectively.

I have found this partial impotency to exist in nearly all sufferers from hemorrhoids, and many of them had been treated and had taken "cures" for restoration of sexual vigor without knowing the real cause of their trouble.

Where it is not a result of venereal or constitutional disease, but piles are in evidence, incapacity will grow less and manifest improvement will set in at once with the successful removal of the hemorrhoids.

In one instance, however, I found a rectal irritation producing an unexpected condition—the exact opposite of incapacity. A professional brother came to me, stating that he had become really brutal in his embraces, that for some time he had noticed a gradual increase in his desire and that during copulation something spurred his action to uncontrollable movements, resulting in pain, if not real injury, to his partner, while he felt an unsatisfied sensation for quite a while after the orgasm and a peculiar pain around the anus.

No lesion was found in the sexual tract, but all crypts of Morgagni were filled with a dry, hardened material and their mucous coverings were quite sensitive. These pockets were emptied, and after all inflammation had subsided coitus was normal, without irritation following.

Another man, 45 years of age, had been advised by two surgeons of good repute that the removal of his prostate gland was necessary for his relief. He complained of inability to reach the climax of coition without great effort, the orgasm being so long delayed; and that, when he gave up the attempt, cloths wrung from cold water had to be applied to subdue the erection. At these times, he suffered pain in the whole body of

the penis, severe at the pubic junction and in the region back of the pubes, and a dull pain at all times along the root of the penis, between the scrotum and anus. His prostate gland was considerably enlarged, but not dense, nor could any nodules be detected; however, on either side it was partly overlapped by an oblong hemorrhoidal body.

This man had never had a venereal disease, was never seriously ill, had a family of five healthy children, and first noticed a change in his sexual condition after an enforced continence of five months during the illness of his wife and her recovery from an operation. With each trial at cohabiting, his condition seemed gradually to become aggravated, and this became the one topic of his thoughts and the only one of his conversation when with a physician or someone in whom he had confided. Removal of the hemorrhoids, a few milkings of the prostate gland, and a course of nuclein and arsenates, as a tonic, restored him physically and mentally.

A husband and wife came to my office together. They were parents of grown children, in fact, there were two grandchildren. Trouble was in the air. After the winter's work as foreman in a lumber camp, far from home, the husband had returned, and soon afterward the wife at times found streakings of blood in his seminal discharges. Accusations of misconduct followed, answered by denials. Time went on, but his condition did not im-

prove. Then followed the wife's refusal to cooperate in the sexual act. The husband was greatly depressed, became morose and sullen, and wordy quarrels ensued at intervals. But he did not seek medical advice until after some person had unwisely counseled the wife to seek a separation and she had entered suit for a divorce.

Then the visit to my office. Their minds had become so poisoned by this time, one against the other, that each now thought only of revenge. Their years of undisturbed, faithful, happy, married life seemed to have been entirely forgotten. He admitted that many times in the past twenty years he had suffered intensely from hemorrhoids, and examination showed a bad state of chronicity. Still, she would not accept my statement that this might be the cause of his present condition. The husband, through anger over being wrongfully accused, allowed the suit to come to trial within a short time. In the time intervening, someone meddled with the court, and a wise and prudent judge frustrated the plans of attorneys, by postponing his decision until after a course of treatment, which he ordered for the man, had been taken and a report of the same made to the court. The treatment restored the man to perfect health. Time, with continued advice from the judge brought about the wife's absolute belief in the innocence of her husband, and "they lived happily together ever after."

Vaccine- and Serum- Therapy in Everyday Practice

IX. Infections of the Mouth and Throat

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from October issue, page 835]

Alveolodental Pyorrhea

IT is only in recent years that the enormously important role of pyorrhea in the causation of metastatic infections has been adequately understood. So much has been said and written, of late, on this subject that we cannot begin to cover the matter in a part of one paper, because, of necessity, the space is limited. Consequently, for a full and complete consideration of the matter, the interested reader is referred to the mass of literature which has recently appeared in medical and dental journals, noteworthy among

recent works upon the subject of pyorrhea being the epoch-making volume by Bass and Johns, "Alveolodental Pyorrhea."

In practically all cases of pyorrhea ("Riggs' disease"), microscopic animal parasites known as amebæ, are found to be present in the tooth-sockets affected by the disease, and Bass and Johns have made out a strong case against these minute offenders as the probable primary infective agents in this condition. However, if these amebæ be the primary infective agents, they are soon overshadowed by the secondary invasion of hosts of pathogenic bacteria, among which may be named streptococci, the various staphylococci, the

pneumococcus, and micrococcus catarrhalis, while other, probably less important, organisms present are various spirochetes and vibrios.

As a pathologic condition, pyorrhea is bad enough in itself, causing, as it does, the loss of the teeth and an extremely offensive breath; but, the real importance of Riggs' disease lies in the metastatic foci of infection which travel in its wake. Its connection with follicular tonsillitis, postnasal catarrh, the various infectious processes affecting the respiratory tract, chronic gastritis and enteritis, and the anemias (both simple and pernicious) is now generally admitted; so also are its relations to the various joint infections, many cases of endocarditis, and nephritis.

Too much cannot be said as to the importance of eradicating this disease, just as soon as it is recognized—for reasons which should be perfectly obvious; but we cannot enter into that phase of the subject here. As to treatment, prophylaxis, naturally, is of first importance; and it goes without saying that everyone should regularly make use of a proper toothbrush. Next, if people would have their teeth "looked after" by a dentist every three or at least every six months, they would all be better off both financially and in their health; for, the dentist would be enabled to recognize such conditions as pyorrhea in their incipency, and treatment could be applied, with a reasonable hope of success in eradicating the trouble.

Once the pyorrhea is established, however, energetic treatment must be instituted promptly. Emetine is the most efficient amebicide known, and may be administered either hypodermatically or by mouth, the former route being preferable. A series of daily injections should be given, the course extending over a period of about a week. This series should be repeated once a month for several months, until the disease appears to be cured; and then at longer intervals, to guard against recurrence.

Besides the internal treatment, a dental lotion containing emetine should be applied, by means of a toothbrush, every evening before retiring. Where the disease has progressed to such a point that the alveolar process has been destroyed extensively and the teeth show no tendency to tighten under treatment, these badly affected teeth must be removed, in order to afford ready access to the pus-pockets; which latter are to be swabbed out with tincture of iodine at frequent intervals, until the trouble is eradicated.

As to the bacterin-treatment of the secondary infection, a stock bacterin containing the varieties of microorganisms mentioned in the beginning of this chapter may first be tried. The proper initial dosage is about as follows: Streptococcus, micrococcus catarrhalis, and pneumococcus, 20 to 30 millions each, and staphylococci, 100 millions of each variety. If the dose be adequate, some focal reaction will be quite likely to occur in the way of increased tenderness of the gums and a slight aggravation of any constitutional symptoms present at the time of the inoculation. As long as any of the foregoing symptoms result, or if improvement takes place, the dose should not be increased. In case no improvement follows the administration of a stock bacterin, an autogenous preparation must be resorted to. The proper interval for bacterin administration is from four to ten days.

Acute Follicular Tonsillitis

This condition is due to infection by streptococci and staphylococci, particularly the staphylococcus aureus. The symptoms—such as high fever, chills, headache, backache, sweats, and local swelling and inflammation, with plugs of foul-smelling mucus and pus exuding from the tonsillar crypts—are too well known to need more than casual mention; yet, many unfortunate errors are made in differentiating this condition from faucial diphtheria. However, if one keeps a few differential diagnostic points clearly in mind, there is small chance for error in this regard.

In diphtheria, there is a "false membrane," which is an integral part of the mucous membrane covering the faucial surface of the tonsil, coagulated by the action of the diphtheria-bacillus and its toxin. This pseudo-membrane cannot be removed by the use of a cotton-wrapped probe, without the application of considerable force; and, if this be resorted to, it is prone to leave a raw and bleeding surface. In follicular tonsillitis, the crypts are filled to overflowing with mucus and pus, plugs of which protrude from the openings on the surface of the tonsils; but there is no tendency for these plugs to coalesce and form a membrane. Furthermore, when a membrane originating upon the surface of the tonsils bridges across the soft palate or involves the uvula, the condition may safely be regarded as diphtheria.

Bacterin-therapy in acute follicular tonsillitis has, in my experience, been very efficacious, not only in shortening and lightening the attack proper, but in preventing such

grave complications and sequelæ as arthritis and endocarditis.

I employ a combined stock bacterin containing streptococcus, pneumococcus, and staphylococcus aureus et albus; the initial dosage being from 20 to 30 millions of each of the two former, and from 50 to 100 millions of each of the varieties of staphylococcus. This dosage applies to adults; for children, one-fourth to one-half this dose is employed, according to the age of the patient. If no improvement is manifest in twenty-four hours, the dose is to be repeated, but slightly increased in size. If, however, marked amelioration of the symptoms follows closely upon the exhibition of the initial dose, another one of the *same size* should be given in from forty-eight to seventy-two hours.

In addition to the bacterin-therapy, it is always well to give a full dose of calomel and sodium bicarbonate and to empty the intestinal canal, in order to obviate intestinal autotoxemia. Acetylsalicylic acid (aspirin), 5 to 15 grains every three hours, is a remedy of time-tried value. Aconitine seems to exert an almost specific action on the pyrexia of tonsillitis. This antifebrile is to be given in small doses, at frequent intervals, until the temperature begins to fall, the skin becomes moist, and the pulse has appreciably slowed; then at longer intervals.

An icebag applied to the throat gives considerable relief from pain; sometimes ice-water irrigations applied directly to the tonsils materially relieve the pain. Swabbing the tonsils with 10-percent silver-nitrate solution gives great relief in many cases; but one must be careful to see that there is not an excess of the solution in the swab, else some of it may find its way into the larynx, with possibly disastrous or at least most disagreeable consequences.

Diphtheria

As we have gone into the differential diagnosis of diphtheria when considering acute follicular tonsillitis, nothing further in that direction need be said at this time. Suffice it to mention that in every doubtful case the antidiphtheric serum should be administered promptly and in sufficient dosage while the report of the state public health laboratory (or municipal laboratory) on the swabbing from the throat is being awaited. Give the patient the benefit of the doubt.

As to the dosage of the serum, the opinions of competent authorities vary somewhat; but, if one should err in this regard,

let it always be on the safe side—*give enough!* In the early years of my experience as county health officer of Emmons County, North Dakota (a county of 1800 square miles' area), I administered from 1000 to 2000 units in mild cases or in cases seen during the early stage of the infection; and from 3000 to 5000 units in severe or advanced cases; and the results obtained from this dosage were very good, indeed. Among several hundred cases so treated, there were but 4 deaths. This may, to a certain degree, be accounted for by the fact that my practice to a great extent was among Russian-Germans, who are a very rugged people—for, surely, life among them has been a struggle that needs made for the survival of the "toughest," if not the fittest.

I recall in particular one instance of what "antitoxin" did in one family, some ten years or more ago. A 9-year-old boy rode, bareback, 12 miles into town to have me go out to his father's homestead. The little fellow came because he, of a large family, was the only one not down with diphtheria. The mother and 6 small children were all very ill. Two little girls, twins of about 4 years particularly, I found were desperately sick; not only the tonsils and uvula were covered with necrotic pseudomembrane, but the nasal cavities also were filled with it. As I had only a limited quantity of serum, I divided it between them, the two little girls receiving only 2000 units apiece. Yet, both recovered.

In another case, one of laryngeal diphtheria, a little girl was cyanotic, and nearly asphyxiated when first I saw her. I gave her 3000 units of antitoxin, and, two days later, another 2000 units. At the same time, we slaked some quick-lime and, putting this, together with a little creosote and tincture of iodine, into a teakettle with boiling water, forced the child to inhale the steam, conveyed through a long paste-board mailing-tube. In a short time, the effect of this treatment was apparent; the membrane on the vocal cords began to loosen, and soon large masses of it were coughed up. This gave great relief for several hours, when the steaming had to be repeated. However, the child ultimately recovered.

This steaming with freshly slaked lime I can recommend strongly, as I have seen it save the lives of many children, who, without this adjunct treatment, would have been asphyxiated before the serum could have performed its mission. Of course, tracheotomy might have taken the place of the steaming; but then, tracheotomy has its disadvantages, and a physician would have a hard time per-

suading Russian parents to allow him to perform this operation on their child. As to intubation, that is difficult, at times even dangerous, since one may dislodge the pseudomembrane downward when placing the tube, with the result that the bronchi may become occluded and death occur.

Returning to the question of dosage, I now use between 2000 and 5000 units of the serum in the "mild" cases and 10,000 units in desperate ones. I know that competent authorities give as high as 30,000 units in bad cases; but, personally, I doubt whether 30,000 units of antitoxin will save life when 10,000 would fail. However, as was said earlier in this paper, if one should err as to dosage, let it ever be on the *safe side*, and, *give enough serum!*

A great deal has been said about "serum-sickness" and "serum rash"; but, in an experience covering the administration of over 1000 doses of antidiphtheria-serum, I have seen just 2 instances where an eruption followed, while I saw no case of anaphylaxis. The two cases of rash occurred in two children in the same family, to whom the serum had been administered simultaneously. This resembled the rash of measles very closely and gave rise to a troublesome itching; but it soon disappeared.

Strychnine is the drug for cardiac weakness in diphtheria; while the "triple arsenates" of iron, quinine, and strychnine are indicated during convalescence. Formic acid, in dose of 5 to 18 minims, has been recommended as a cardiac tonic in diphtheria; and it is believed by some that this drug prevents, to a certain extent, the postdiphtherial paralysis of the pharyngeal and palatal muscles. I have used it in a number of instances, but could never quite convince myself as to its actual value or otherwise.

I am a firm believer in local application in the treatment of diphtheria. The tonsils should be swabbed frequently with one of the mild alkaline antiseptic solutions, and the membrane should be gently removed as soon as it will come away without the application of any great amount of force. The necrotic surface is a most suitable medium for the multiplication of the diphtheria bacilli, and it should be gotten rid of as soon as it loosens. Fresh pineapple-juice contains a proteolytic ferment (bromelin), which exerts a digestive action on the pseudomembrane of diphtheria; it is, therefore, a suitable food or beverage in this disease; also, it may be applied directly to the tonsils by means of a swab.

In diphtheria, there almost always, if not always, is present a mixed infection, the streptococcus and staphylococci being co-existent with the diphtheria bacillus. Consequently, I have, of late years, been in the habit of administering a combined bacterin containing the former varieties of organisms, at the time I administer the antidiphtheria-serum, and I believe the results justify me in this method of treatment.

Peritonsillar Abscess (Quinsy)

In this, as in all abscesses the correct procedure is to evacuate the pus as soon as you are certain that any is present. However when a person who in the past has had one or more attacks of quinsy experiences the premonitory symptoms of a "sore throat" a dose of a stock bacterin, such as was recommended under the heading of "Acute Follicular Tonsillitis," together with calcium sulphide to saturation, quite often will avert a recurrence of the old trouble.

As soon as the presence of pus is evidenced by a bulging prominence in the region of the tonsil, lancing is in order. The "line of safety" for the incision is halfway between the base of the uvula and the last upper molar tooth, cutting along this line. When this line is followed, one is not very likely to encounter any sizeable blood-vessels. It is always well to make a generous opening, for, a small incision will close within a few hours, and a repetition of the lancing may become necessary. Should the incision close too soon, it may be reopened by quickly pushing into the old wound a Kelly hemostatic forceps, closed up, and then opening the blades.

The patient who has had repeated attacks of quinsy should be urged to have the offending tonsils removed, that is, completely enucleated, since this is the only certain method by which he may forever rid himself of the possibility of recurrences. The operation may be done very nicely under local anesthesia (with novocaine and adrenalin).

Chronic Follicular Tonsillitis

Of late years, the work of Billings, Ros-enow, Murphy, and others has forcibly called our attention to the fact that practically all the oldtime "chronic rheumatism" cases are but metastatic infections having their primary focus in diseased tonsils, pyorrheic tooth-sockets, accessory nasal sinuses, and in colons with stagnant fecal currents. It is nothing short of wonderful how these "rheumatic" cases improve consequent upon the thorough, complete removal of chronically diseased

tonsils, the proper treatment of pyorrhea (as heretofore outlined), the drainage of pus-filled antra and frontal sinuses, and proper colon hygiene; however, bacterin-therapy must, positively, be employed simultaneously and conjointly with other indicated measures, usually of a surgical nature.

In these cases of long standing, the opsonic index usually is so low that the removal of the primary focus or foci of infection will hardly suffice to effect a cure of the metastatic infections in joints, muscles, and nerve-sheaths; and it is here that bacterin-therapy can, and does, do wonders. It is true that bacterin-treatment alone is of great benefit in these cases; nevertheless, it is a self-evident fact that the rational procedure consists in first removing the primary focus of infection, if a permanent cure is to be expected.

The bacteriology of chronic follicular tonsillitis is practically identical with that of pyorrhea (q. v.); and what has been said as to the bacterin-treatment of the latter disease will apply equally to the former.

With regard to the surgical treatment of this condition, I wish to register a vigorous protest against employing the tonsillotome, which I regard as a relic of the dark ages. Even in the hands of an experienced operator, this instrument never will remove the entire tonsil, but it leaves, usually, from one-third to two-thirds of the diseased gland, thus opening wide the lymph-channels and, so, often aggravating rather than alleviating the trouble. Besides, the tonsillotome is very liable to hack out pieces of the faucial pillars, with consequent impairment of vocal resonance.

When a tonsil is diseased to such an extent that it requires surgical treatment, nothing short of complete enucleation will suffice; free dissection, under local anesthesia (with novocaine and adrenalin), followed by the use of the cold wire snare (the Tyding snare), gives splendid results, with the minimum of risk.

Infections of the Salivary Glands

These infections are comparatively rare, but occasion a great deal of suffering to the patient, and trouble and worry to the doctor when he does encounter them. In all the cases I have seen, the infection could be traced to a preexistent pyorrhea or chronic ton-

sillitis. Consequently, when a patient has been the victim of an attack of this nature, due attention must be paid to the predisposing cause.

The bacterin-treatment of infections of the salivary glands is identical with that of acute follicular tonsillitis, which see. Infection of the salivary glands quite commonly ends in suppuration. Sometimes the abscesses may be drained through the floor of the mouth and this route, when practicable, is preferable to an external incision, in that it leaves no visible scar. Saturation with calcium sulphide at the beginning of the attack I believe to be a valuable aid to bacterin-treatment.

Ludwig's Angina

This severe form of infection of the structures constituting the floor of the mouth probably is due to the streptococcus. Sir Almroth Wright, in his "Studies in Immunization," describes a desperate case of this rather rare affection. In Wright's case, a surgeon had made multiple deep incisions into the indurated area, but the wounds would not drain. Wright then administered 60-grain doses of citric acid, at 3-hourly intervals, and within twenty-four hours lymph had begun to ooze from all the wounds. The administration of the acid was then discontinued. Bacterin-treatment was not instituted in this case, as a determination of the opsonic index showed the latter to be 1.8.

Here, it was merely a matter of securing a plentiful supply of the antibody-laden serum in the streptococci-filled tissues, in order to effect a cure. Had the index been below normal, a streptococcus-bacterin would have been indicated. In the absence of a determination of the index, the safe procedure would have been to administer the bacterin, anyhow, as a "safety-first" measure.

As long as there is any doubt as to the specific causative relationship of the streptococcus to Ludwig's angina, it is well to combine the staphylococcus aureus with the first-named organism. The dose of the streptococcus pyogenes is 30 to 60 millions, and of the staphylococcus, 50 to 100 millions. Calcium sulphide, to saturation, if the patient can swallow, is indicated. Strychnine may be needed, if there is marked prostration.

[To be continued.]



An Account of an Epidemic of Measles*

With a Review of Eighty Cases

By E. W. GARDNER, M. D., Webster, Iowa

MEASLES is not some new fangled disease, but has an ancient and florid pedigree. Whether the bug or the disease was the pre-existent we cannot say, but the differentiation of the disease as an entity may be placed in Sydenham's time. Prior to that, an individual with fever and artistic dermal decorations was at a loss to differentiate his affliction as measles, smallpox or scarlet fever. But, after Sydenham classified the aches, even the medicos could recognize the clinical pictures.

Measles being satisfactorily contagious, pandemics of the affection have scourged continents. In 1775, the Sandwich Islands made the acquaintance of the white man's Bible, booze, and measles. Within four months, 40,000 of the 150,000 population gave up the ghost in disgust and efflorescence. The historian fails to state which was the active agent, or whether the action was a synergistic one.

During 1834 to '43, Europe was swept by measles, and the dust was blown to adjoining continents. The mortality rate is not recorded, which is just as well since it prevents a dubious comparison with the present rate. Panum, a physician in the Faroe Islands, records himself as having been moderately busy in 1846. It seems the gentle measles had neglected these islands for some 65 years; consequently its introduction was quite successful. Of the 8000 population, more than 6000 entertained him with great warmth. Many died, while more regretted that they could not.

With such competitive headliners, my account of an endemic affecting only some 80 individuals must be considered inconsequential. Nevertheless, played to the restricted house of our small community, as a means of entertainment it was quite effective.

Because of the bodily limitations of a medico not built—as you will observe—according to the architectural specifications of a Jess Willard, it was found impossible to examine and tabulate the findings of the cases as well as I could wish. The 50 odd patients whom I saw ranged in age from eight weeks to 50 years. The age in no wise determined the disease intensity; of the four

infants affected, two were breast fed, and had been infected by their mothers.

The epidemic originated from one young man who, being in misery, desired company and sought it in a crowded public building. Having received many condolences and minute directions for infallible cold-cures, he returned to his home where he retired with hot lemonade, blankets and misgivings. Within 12 hours the lemonade was thrown up, the blankets off, the misgivings were confirmed, and he blossomed as an urticarial rose. We haven't yet decided on his rate of commission, for he's inclined to be hoggish.

Being incompetent to discover in one fervid epidemic all the endearing qualities of measles which thousands of observers in the past two centuries have found, I will now boldly crib wherever possible. I am sure those others do not object, and I hope you will not.

Apparently the laity dubs measles a child's disease because it affects children and adults alike. As a dispeller of optimism in its host, it is equalled only by its small financial value to the medical man, who is fortunate if he averages two visits per case. In this wise its value is less than that of a news item to a village newspaper; for this, as George Fitch said, is worth three insertions: future, present and past.

Measles however, is neither snob nor prude. It infects race or individual irrespective of apparel or of its lack. Apparently, however, it best appreciates the close-to-nature flavor of the savages of whom it conscientiously gathers some 50 percent to their mothers. It is just about the most transmissible of all diseases, and presumably is a bugous affair; but, as the offending bacterium has not been isolated, any one is justified in his opinion.

Goldberger and Anderson have shown that the virus of measles may pass through a Berkefeld filter, may resist desiccation or freezing for at least twenty-four hours, does not respect union rules, and becomes non-infective after fifteen minutes' exposure to 131° F.

In 1908, two Italian physicians whose names (Pacchioni and Francioni) succumbed to my pen but defy my pronunciation, made thrilling explorations into the habitat of measles virus with the hope of capturing an adult and authentic specimen. Their re-

*Paper read at a meeting of the Des Moines Valley Medical Association held at Ottumwa, Iowa, in 1916.

ports are conflicting and suggest a Peoria flavor. As Forchheimer says, "The sum and substance of this research is, that there is found a bacterium only in the secretions . . . and that the opsonic index to this bacterium is increased."

Lorey suspects measles of a double life, I think. He does not go quite so far as the gentleman who, a few years ago, ingenuously announced that Shakespeare's plays were not written by Shakespeare but by another man of the same name, but he does suggest a very close relationship between measles and erysipelas. He says: "The erysipelas-streptococcus is the most frequent cause of complications in measles; and the intensity of an epidemic is determined by the relative presence of this in the blood and in the tonsils. With all our medical progress, our knowledge of the etiology of measles barely exceeds that of Home, of Edinburgh, who, one hundred and fifty years ago, declared the virus to be "in the blood." Forchheimer contents himself with saying that Clinical Experience, and Hektoen, confirm this postulate.

Measles is an advocate of the slogan, "From Factory direct to Consumer." In other words, the exposure must be by direct contact of respiratory secretions or blood and must occur during either the stage of invasion or of desquamation. Air may carry this contagion, but it is extremely questionable whether a third person can officiate. Again, some question whether transmission is possible during the stage of desquamation. Following the lead of Kerschensteiner, Forchheimer declares dogmatically, that there is no contagion during the stage of desquamation. Corlett asserts that contagion . . . continues until desquamation has ceased; and his statement is upheld by Osler. Now I certainly should hate to disturb the good old Irish feelings of Doctor Kerschensteiner, but in our epidemic there was one unquestionable infection ten days after the donor had a normal temperature.

That there may be measles-carriers, as there are typhoid-carriers, is intimated by Ross in a recent London journal. He says: "Although the intracellular parasites disappear from the blood of cases of . . . measles as soon as the febrile stage is over, they still may be found in the cells of the aural, nasal, and abscess pus for long periods after convalescence is established."

Immunity

Congenital immunity is possessed, I think, only by those whose habitation supports the

rainbow. Experiments at immunization by inoculation and serums have been entertaining only. So far as I know, immunity can be gained only by due and personal affliction. Forchheimer, Osler, and others declare nursing infants to be relatively immune, even when nursing infected mothers. In our epidemic, however, of two nursing infants, both were infected by the mothers. Civilized races apparently possess an inherited semi-immunity; at least the severity and mortality rate is lower, although this might be due to the sanitary conditions being better than among savages.

Even the immunizing value of a subsequent attack is questioned. Men of wide experience, such as Schwalbe, Grancher, Anders, and Forchheimer, state that reinfections not only occur, but are not exceptional. Anders mentions one family who suffered four annual successive attacks. Certainly they should have bought coupons or green trading stamps. Maiselis has collected a series of 106 undoubted cases of reinfection, 3 of which were suspected third attacks. O. Heubner remains safely on the fence: he says that one attack induces immunity, but adds candidly that many violations of this rule occur. Barthe and Sannez report but 3 reinfections, from an experience with 1521 cases. Osler states that infection confers a complete and lasting immunity, second infections being very rare, indeed. Kerley mentions but one. Among others, one lady told me that she had enjoyed four attacks. However I am quite well acquainted with this lady, and, although excellently exposed, she failed, unfortunately, to make good in our epidemic. In his report of several thousand cases, in three successive epidemics among the same islanders, Panum does not mention one reinfection.

Infection of a child in utero, with eruption, at or immediately following birth is a matter of record. On the other hand, Woods, of Iowa City, reported, in *The Journal of the American Medical Association* for September 5, 1914, a case of measles in an infant born three weeks after its mother had recovered from the attack. There were no evidences of intrauterine infection, but several months later the child displayed an orthodox eruption. Goldberger, Anderson, Hektoen, and others have inoculated animals with infected blood and obtained an eruption with Koplik spots.

Records fail to show a mortality rate for uncomplicated measles. Osler says: "Measles-toxemia rarely produces death, and the fatal cases always are complicated by other lesions, the most frequent being pneumonia, colitis,

and nephritis." As the national annual death rate from measles approximates 13,000, the benignancy of its complications is not evident. The inflammatory process affects every mucous membrane. In severe cases, the blood is deteriorated and contains staphylococci and streptococci. Many bacteria have been credited with the production of measles, only to be shorn of their honors by later studies. The complications in measles differ in no way from the same processes in unmeasly patients. Focal abscesses are occasionally found in the liver.

Incubation

Incubation averages ten days, with a range of between five to fifteen. In suspected cases, I saw, or elicited, subjective symptoms by the seventh day. Observers differ regarding the incubation blood-picture. In Osler's "Medicine," Ruraeh writes: "This period shows a leukocytosis which does not persist through the stage of invasion; differing in this from scarlet-fever." Lucas, however, in *The Journal of the American Medical Association* for March 6, 1915, states: "There is leukopenia, with diminution in number of leukocytes." He adds: "A diminution in the number of lymphocytes and neutrophilic cells is noticeable a week before other symptoms, and precedes Koplik spots by at least forty-eight hours. In pneumonia, cerebrospinal meningitis, and scarlet-fever, there is a leukocytosis, but not in measles." I made but two counts, both preeruptive; both were leukocytic, in the neighborhood of 15,000.

Grumann quoted in *The Journal of the American Medical Association*, steals some of Koplik's thunder. (*Muenchen. Med. Woch.*, Jan. 20, 1914.) He says that not every measles-patient wears Koplik spots, while he always has found, in cases that later erupted, peculiar whitish efflorescences on the tonsils. These are punctate or linear and about 3 mm. in length. He says that these spots are absolutely reliable, precede the Koplik spots, and he never did like the way Koplik combed his hair, anyway. I failed to find any—spots, not hair.

I found the exanthem on the hard palate on the eleventh, tenth, ninth, and even eighth day. I found no Koplik spots in the nares, although there was coryza as early as the seventh day. Chills were rare, there being but one frank case; and this ran an uneventful, though severe, course.

According to Osler, this period of incubation may have prodromal eruptions in cases running as high as 40 percent. This shows as a

fine rash appearing twenty-four hours prior to the measles eruption. I failed to find any such case.

In 1898, Bolognini described a peritoneal crepitation, which he considered pathognomic and the result of a peritoneal eruption. This is sought by gently pressing the finger-tips upon the relaxed abdomen. A to-and-fro motion will then elicit a slight friction, "as of two bottles rubbed together," but which disappears upon deeper pressure. It is not found after the skin is erupted. I found 3 cases of this.

Although I have found it described nowhere, every case displayed a characteristic tongue. What its diagnostic value may be, I cannot say, but, in every case it came early and stayed late. It was a peculiarly glazed tongue, with a moderately heavy dull-white furring down the center. In the posterior half, this deepened to a heavier dirty-brown. The central coating of the anterior portion thinned toward the edges, becoming an inflammatory red, with elevated and redder papillæ. These flaming dots invaded the anterior sixth, being set in strong relief by the fur. This appearance of the tongue was noted earlier than any other symptom, and red depressions persisted during desquamation.

The classical spots of Koplik were found in every case, except in the nursing infants, in whom the rash was scattered, light; they suffered from mild coryza, bronchitis, and fretfulness; but the temperature did not rise above 101 degrees.

Invasion

Invasion occurred in no case later than the tenth day, and was politely introduced by temperatures varying from 99° to 104° F. All prodromal pleasures were thereby increased, although two patients disavowed feeling any discomfort at any time. Vomiting was not infrequent, though less common than in scarlet-fever, of course. Epistaxis occurred early in several cases, more often in the late stages of the eruption; two cases required gauze packing. There was but one case of frank convulsion, and this, as well as a loaded stomach and all earthly ambition, was relieved by 1-20 grain of apomorphine. During the eruption, however, there were two cases of convulsions unrelated to gastric origin.

The period of invasion, without exception, comprised four days, with a temperature almost or quite normal on the second or third day; usually the latter. I saw no case

erupt at a temperature less than 104 degrees. The highest temperature was 106° F., and this in only one case; almost every other case utilized a temperature of 104 or 105 degrees. With this, there often were cold extremities and a blanched surface, thus confusing the parents. The mental effect of this fever varied from stupor to a species of mania; the majority of patients merely were drowsy and extremely thirsty, the thirst being assuaged by an ounce or less of water.

The eruption appeared between the fourteenth and the twentieth day, the great majority at the fourteenth. One failed to erupt. Of this type, Embden reports 20 cases in a series of 461. Aside from non-eruption, this case exhibited every other symptom, except temperature, which did not reach 102 degrees. The patient said that this attack was a second one, occurring twenty-five years after the first. That she was three months pregnant, added interest but no complication as she did not abort, although in the past three and one-half years she has achieved one child and three abortions to my olfactory knowledge.

The characteristic odor of the breath invariably was present, but only *after* the period of incubation, and varied in intensity with the temperature. I found, contrary to the statements of the infallible laity, that measles cannot be diagnosed from the front door by the nose of the investigator, except in those houses equipped for submarine service.

We had no hemorrhagic cases. I found indubitable proof that cold air in the sick-room retarded eruption; whereas a moderately hot room (80°), with hot bathing, relaxed the capillaries, filled them with blood and induced sweating, with rapidly spreading eruption. Profuse sweating, with temperatures of 104 or 105 degrees, was common and interesting, particularly to the parents, who lost thereby an ancient and infallible axiom governing home posology.

Desquamation varied in degree and length. Some showed scales only on the eyelid margins; others were quite generous, and continued to scale for ten days. Osler says that the desquamation lasts two or more weeks, but that the scales very seldom are infective.

Cause of the Exanthem. Complications

The cause of eruption Von Pirquet (*J. A. M. A.*, June 6, 1915) believed to be dependent upon the vascularity of the skin, first; while the rash is the result of a "reaction with the measles-organism or virus which takes place

in the capillaries of the skin, and may be due to an agglutination of the measles-organism by the action of its antibodies."

In our epidemic, complications were mild. *Otitis* was frequent, especially during retrocession, but contented itself—and the patient—without pus formation. Regarding otitis, Kerley says that purulent, and even non-purulent, otitis is not necessarily accompanied by pain. *Bronchitis*, with mucus and mucopurulent secretion, was almost invariably present, but one patient escaping. There was no case of frank bronchopneumonia, although many teetered dangerously close to it. One case, typical of bronchopneumonia in every respect, resolved in a very interesting and unexpected manner. Did not Osler declare that these processes may stop at any point and go on to recovery, I might be inclined to question my findings. I should say, however, that the dividing line was very elastic, and that bronchopneumonia is more often present than we are prone to admit—it being masked by the somatic symptomatology. Pleuritic pains were frequent, also neuritic and muscle pains, but no frank pleurisy. Neither was there any lobar pneumonia nor pulmonary necrosis. One lady, 50 years of age, had an endocarditis of mild degree, but this resolved without disaster. *Stomatitis* was common, but was not accompanied by gangrene. *Ophthalmia* was uniformly present, without corneal erosions. Styes frequently relieved the tedium of convalescence. Diarrhea, particularly after indiscreet feeding, was encountered, but was not intractable. There were 4 cases of complicating chickenpox. There was no marked nephritis, though albumin in small amounts was found. *Pseudocroup*, with later extrusion of membranous shreds, was seen in 2 cases. No bacteriological examination was made of these. There were no instances of pharyngeal or tonsillar membrane. Aphonia, following laryngitis, and persisting four and six days, respectively, occurred in 2 cases. There were no skin complications.

Relapse has been reported by several observers. Corlett, however, believes these to be cases of unrecognized rubella.

The *diagnosis* sometimes may present difficulties, particularly in sporadic cases. In this epidemic no such difficulties arose, and the factors to be considered in differential diagnosis, therefore, will receive no attention here.

As to the *prognosis*: Although in itself measles is a nonfatal disease, complications are so certain to accompany it that prognosis

must be guarded. In Sydenham's time, measles was more fatal than even smallpox, and there are records of similar portent that antedate his by centuries. Osler reports epidemics in which the death rate has exceeded 50 percent, particularly in hospitals where septicemia complicated. In a series of 5067 cases in Paris hospitals, 2003 were fatal.

Age is a factor in the mortality rate. In the Parisian report mentioned, the death rate at 1 year or under was given as 62 percent; this steadily diminishing with the increase of age until the age of 40, at which period the death rate again began to rise.

Prophylaxis and Treatment

Regarding prophylaxis, Forchheimer says optimistically: "Prevention of measles is an impossibility," because "prevention of any disease is possible only when its natural history is known." Since the incubation-period often entails no great discomfort, a carrier quite often may infect an entire community, and then wonders at the devious ways of Providence. Added to this, there is the time-hallowed attitude of parents in exposing their young children, so that they "will not have it later"—Osler advises postponement of infection, when possible, until after the fifth year; and Newman says, aptly: "The prevention of measles is largely in the hands of the public." Isolation is the solution.

The treatment of measles—here I pause in admitted perplexity. In measles, as in courtship, every man has a method all his own. In either instance, I take it, the doctor pays due attention to the symptoms the while he makes such speed as is possible toward a predetermined end. The technic of treating premarital insanity does not here concern us. Still, to continue the figure, what Holt says regarding measles, is equally applicable to the other: "It is a self-limited disease, and there are no known measures whereby it can be aborted, its course shortened or its severity lessened." Now, that may be very true; yet, Ander's words anent the treatment of measles are suggestive; "The treatment is necessarily symptomatic," he says; "hence, our efforts should be directed toward protecting the various organs that are most likely to become involved by complications, remembering at the same time that the nose, ears, eyes, and throat are involved during the fever-stage, and that the skin is in a very susceptible condition."

In the belief that our appellation of "physician" applies for good and historic reasons,

almost every one of my patients received castor-oil. With what accompanying words they swallowed it need not here appear, but it did not tarry long. However, it was not followed by any later cathartic, because of the colitis present in the eruptive stage.

Fever and aching responded but faintly to anything. In the first dozen cases, I experimented with aconitine, aspirin, phenacetin, acetanilid, and the like, but soon came to Anders' view. I did not use cool sponging in the preeruptive stage, but gave frequent hot baths instead, with cold to the head. Codeine was valuable. Acidulated beverages produced bloating. Hot drinks were no more efficient than cold ones for eruptive purposes. When high fever was associated with cold extremities, atropine, glonoin or whisky were used, and heat externally. To relieve the clinical picture of pain, fever, bronchitis, nervousness, dry throat, and so on, I found no other one preparation so valuable as the powder whose formula, compounded over a century ago, bears the name of its originator, Dover.

As to the amount of light to be admitted to the patient's room, writers differ. Some authors contend that red light possesses curative properties. The red light I have not tried, but the amount of light admitted was left somewhat optional with the patient. I do not advocate total exclusion of light, for several reasons, not the least of which is the tendency for a feverish patient to "lose himself" in darkness and to become delirious. Boric-acid solution and zinc-oxide ointment were used in the eyes.

Milne, in the *Journal of the American Medical Association* (July 18, 1914) reports his experience with the eucalyptus-oil treatment. Briefly, this consists in the oil being rubbed in over the entire body, twice daily for four days, and then once daily until the tenth day. This, with deep swabbing with a ten-percent solution of phenol in oil, every two hours for the first twenty-four, will result, he asserts, in a very mild type of the disease and prevent complications. I did not try this method, as I did not know of it until after our epidemic.

For the skin irritation, I used olive-oil, alboline or cacao-butter, either alone or with the addition of phenol or menthol.

For the otitis, I used cocaine, ichthylol or phenol in olive-oil or alboline, in conjunction with heat, preferably moist.

For the Gospel Team whose presence made the epidemic possible, I was asked to donate one dollar, which I gladly did, and now I am industriously saving another for next year.

Therapeutic Indications in Minor Surgery

By A. D. NOURSE, M. D., Sawyerville, Ala.

THE selection of the above headline is open to criticism as the very term "minor surgery" is an arbitrary one. The surgery of everyday practice, especially when the practitioner is so situated that immediate referring of cases to an equipped hospital and the surgeon-specialist often is far from practicable, includes both minor (so-called) surgical procedures and also major operations. Neither is "therapeutic" here taken in its narrow sense, as sometimes accepted, that is, applying to the internal administration of remedies; but is used in a broader meaning.

Since the passing of the days of "laudable pus" and the dawn of modern surgery, every effort has looked toward the attainment of asepsis, or, since this is an ideal practically impossible to secure, antiseptis, as the next-best thing. The number of agents having more or less antiseptic properties is a large one, but the majority that have attained general acceptance are coal-tar preparations of the aromatic series, particularly phenol and its cresol homolog derivatives; besides chlorine combinations and preparations designed to liberate nascent iodine, with iodine itself in alcoholic solution well to the front in its particular field. Compared with these, the silver, boron, and other kinds of compounds have found but limited employment. Phenol (carbolic acid) still holds a conspicuous place, being so prominent that its solution is taken as a measuring-unit in the classification of bactericidal efficiency; still, phenol, as such, has largely given way to other coal-tar derivatives of higher efficiency and less toxicity. So harmless to healthy tissue are some of the latter that in the hands of very many surgeons they have entirely displaced mercuric chloride, the popularity of which now is waning, although absolutely it has enjoyed the greatest vogue of any since Lister's time.

The reasons for the disappearance of this combination of mercury with chlorine from first place among antiseptics are various and weighty. Even in great attenuations, this agent destroys healthy tissue at the very time when we wish to conserve it, through its action of coagulating albumen. There is also, under certain circumstances, danger of absorption and toxic systemic effect from the use of this highly efficient germicide. The results following its accidental ingestion are too well known and numerous to require

even casual mention. Altogether, it is not a safe agent, and, when other and better means for accomplishing the same result are at hand, there is no need of employing this ultratoxic.

For some years past, both when doing considerable accident-work and, more recently, when handling the surgery incident upon a varied general practice the writer has ignored mercuric chloride entirely. Various cresol and related preparations have been employed, instead, where it was desirable to use in substance a powerful yet safe antiseptic; the camphor-phenol combination, in full strength or diluted with olive oil; or pix-cresol combined in the desired proportion with a liquid diluent or boric-acid powder. In the dermatoses, including burns, carbenzol (a tar distillate) has given such good results that it is not difficult to assert that there is nothing better, even in the face of the fact that in this age of rapid evolution there may be something which has not yet come to the attention of a rather close observer.

How Chlorazene Came to Be

So engrossed were surgeons with the bichloride of mercury, that the tendency was, to stand still in development along the lines of chlorine-containing antiseptics other than corrosive sublimate, although the way was clearly pointed out by the somewhat efficacious, if not highly stable official solution of chlorinated soda (Labarraque's solution); war exigencies, however, forced chemical investigation, with the result of giving us something better in the form of a chlorine-containing synthetic.

This new compound is para-toluene-sodium-sulphochloramide, named expressively but so bulkily that, in Europe, it was commercially given the trivial name of chloramine; since this name was preempted for a different article in this country, it is being introduced here under the proprietary name of chlorazene. Thus our chlorine comes back, this time with a nitrogen-chlorine molecule linking in a substitution-product of toluol or toluene of the aromatic series. Toluol already had a place in wound treatment, namely, in our balsam of Tolu, and now we have it presented as a product of higher synthesis applied to the coal-tar derivatives.

The history of antiseptics, if only since Lister's day, would fill volumes, even leaving

out the efforts of empirical medicine, to combat (the then unknown) pathogenic organisms, and ranging from the sometimes misdirected use of "balsams" to simple water and sea-water lavage; the balsam efforts often defeating themselves by stoppage of drainage and of air thereby providing special advantages for anaerobic bacteria. With our present conception of the value of direct oxidizing agents, such as potassium permanganate, succinic dioxide (alphozone), and hydrogen dioxide, as also of the merits of the iodine- and chlorine-releasing agents, and through the results of practical observations, antisepsis has reached an advanced stage, and evidences are that clinical demonstrations, backed by laboratory findings will give us an important addition to our armamentarium in the chlorazene preparation.

Therapeutic Suggestions for the Treatment of Wounds

The treatment of wounds, other than those made intentionally through noninfected tissue and without certain cavity penetration, is one involving antiseptic measures directed against infection concerning the extent or virulence of which we are ignorant. No one can know the depth of implantation nor yet the extent of mechanical or metastatic spread of infection in penetrating wounds and, hence, it is one's duty to treat every possible source of infection as though it were a nidus of trouble; of course, without an unnecessary exaggeration of free drainage by excessive tissue destruction. The principle of suspecting every wound has led to the advocacy of bacterin-therapy in all penetrating wounds. This indeed may be the ultimate procedure, not alone for preventing tetanus and hydrophobia, but also in combating the more common streptococcic, staphylococcic and other infections.

Echinacea, the Vegetable Bacterin

For years before the present vogue of biologic therapy, many physicians have viewed all penetrating wounds with intense suspicion and invariably employed echinacea, a procedure which the author not only feels to be justified, but positively demanded by the best interests of his patients. In the case of wounds that do not permit prompt and thorough cleansing and which do not promise immediate healing, the patient gets echinacea, usually also nuclein, and, when there is suppuration from the wound itself (as in carbuncles, furuncles, and the like), he likewise is saturated with calcium sulphide. If there is preexisting disease or a history of

disease, especially of lues, other indicated treatment is given in addition. If there is no such history the necessity of cell proliferation for the reparative process is considered, and echinacea and nuclein are given because they raise the opsonic index and act as tissue-builders. Often they are applied to the wound directly, and, when the necessity of skin grafting was encountered, nuclein or bovine have been used at times, with perfect success. In time echinacea doubtlessly will receive the full recognition to which it is entitled. It has recently been spoken of as a "vegetable bacterin," and as such many have used it and still do so; not, however, to the exclusion of the bacterins. Although there may be some discussion as to the selection of a bacterin other than an autogenous one, there are never contraindications to echinacea. In the case of chancroids, many apply echinacea as a routine treatment, adding nuclein and belladonna, to stimulate capillary circulation, after thoroughly cleansing the wound with peroxide of hydrogen or other suitable agent. Good results may be obtained from moist dressings, or the frequent application of this combination. However, the writer's preference is for initial cauterization with nitric acid, following the application of a solution containing anesthaine, 3 percent, and cocain, 1-2 percent, or some other local anesthetic.

The use of the local anesthetic in these cases will pay; the young gentlemen of the laity afflicted with cauterizable lesions no longer care to go about bragging of how "doc" put stuff on so strong that it smoked and hurt so that they wanted to "bite nails." People expect all operations to be painless, and the uptodate doctor must have a nearly painless procedure whether it be in obstetrics or in "burning" chancres. Anesthaine being void of the high toxicity of cocaine and novacaine, is a safe agent whether applied to open lesion or used hypodermically; hence, it is a great aid toward the ideal aim at painless minor surgical procedures.

Hydrogen Dioxide Too Much Neglected

Hydrogen dioxide is another article less used than formerly, even though its effect is, in part, somewhat theatrical and consequently psychological. The patient "just saw the corruption boil out," and this mechanical action of the "boiling out" has made this article very largely a lay remedy.

As we all know, water is the monoxide of hydrogen; this plus another atom of oxygen—which is readily turned loose—makes the diox-

ide. The effect of this H_2O_2 is to form instantly a combination with oxidizable organic substances and produce a foam, which removes superficial and readily reached detritus. However, sufficient irrigation with a solution carrying a stronger antiseptic will usually produce better effects. Perhaps the most serviceable use for this solution is for loosening bandages and dressings when stuck to the wound by the exudate. But, if the gauze is moistened with liquid paraffin, this will prevent troublesome sticking. The tendency is to avoid dry powder dressings, using moist ones instead, except when healing by first intention is expected. Where oilsilk would seem indicated over a moist dressing, the addition of glycerin to the antiseptic solution and the gauze moistened with oil often will maintain sufficient moisture and thus prevent sticking until the next dressing of the wound.

The Tissue-Phosphates

While looking to internal aids to repair, where destruction of bone is present, we must not overlook the demand for a calcium-salt. Delayed bony union or a failure of the provisional callus to harden calls emphatically for calcium phosphate, and, as the indications for iron usually coexist, together with a call by the nerve-substance for both magnesium- and potassium phosphate, the three phosphates may be administered together with the iron, also in the form of the phosphate.

The attempt by Schuessler, to base a system of medication on the use of the twelve tissue-ingredients of the body, which he had demonstrated through ash analysis, is a bit far-fetched; still his conclusions were correct so far as they went, although he failed to allow for catalysis and the intermediate products of metabolism. His conclusions are absolutely correct to the extent permitted by his limited horizon. He called attention to one thing that is much overlooked, namely the necessity of supplying fluorine under certain conditions of needful repair of elastic tissue. Where this necessity exists, the calcium salt of fluorine is absolutely indicated, but so little of it is required that we may even follow Schuessler as to dosage and give the homeopathic *calcareo phos. 3 x*.

As to the dosage of the calcium salts, we need neither agree nor disagree with anybody. Except in the case of the lime-saturated aged, no harm results from a liberal dosage with calcium, nature taking just what it wants and throwing off the surplus. For

the hypercalcified aged, the treatment is modified, since little bony union is expected, anyway, and a partial ligamentous union is quite acceptable to the medical attendant who wishes that the "other doctor" had this particular case.

Surgical Aid When Needed

Because there is a trauma or an extension of some pathological condition to the point where surgical interference is a necessity, is no reason why nature's call for assistance should not be heeded beyond merely extending mechanical aid. Nature can beat the rankest drugstore substitutor when it comes to trying to reach out for "something just as good" in furnishing organic constituents or catabolic needs. Nevertheless, there is no reason why we should not strive to supply nature's wants. Of course, one thing is always to be remembered in treating surgical cases. Mechanical aid is the immediate paramount consideration, and we have no right to expect the impossible from therapeutic means. All things having been balanced and surgical interference decided upon, the latter becomes the cardinal point, while other measures become aids to surgical success, in many instances even essential to it. In days not far distant the distribution of medical men will be arranged so that the internist no longer will be required to combine surgical duties with the broad responsibilities of diagnostic and therapeutic work; for, someone devoting himself to surgery always will be at hand instantly to exercise his skill. Many times the internist desires the help of the exclusive surgeon, despite his own careful training in anatomy and surgery. However, he cannot confine himself to "first aid", at present, but must use his talents to their full effect.

What the general man so situated can do in the way of saving digits and even limbs, when his first impulse is to amputate, often is surprising. A fairly good rule to follow under these circumstances when an arterial supply to the extremity can be demonstrated, is, to try to conserve it—always remembering the possibilities of the establishment of collateral circulation. Always remember that under most circumstances taking the chance of saving is justifiable—do not make a cripple when there is a possibility, perhaps by means of a later secondary operation, to save a part. Clean up the ragged wound, trim off hopelessly lacerated parts, restore parts to as close an apposition as possible, by means of ligatures, pressure, and bandages (also ad-

hesive plaster), push antiseptic measures—then give nature a chance.

Local and Hyoscine-Morphine Anesthesia

Even in comparatively minor surgical procedure, better work can often be done under general anesthesia; this being true also for the reduction of fractures and dislocations. It is a good thing to have a trained anesthetist at hand, but how very much one can accomplish all alone in "the brush," is surprising, also gratifying to the patient and no less to the physician. A hypodermic injection of hyoscine-morphine-cactin, the half-strength tablets (1-8 gr. morphine hydrochloride, except for robust individuals) to be repeated if needed and followed by inhalation of small amounts of ether or chloroform, will, with a little practice, make it possible to push anesthesia to any desired point. This obviates the usual after-effects from chloroform or ether and lessens the probability of nausea and shock, as well as of pneumonia and other complications. The operation is followed by sleep—perhaps hallucinate but harmless talk—in stead of nausea and other postoperative complications. Employ local anesthesia where practicable, but general anesthesia where the purpose is served better. Practice will enable a skilled therapeutic artist to get his therapeutic tone and pitch, as does a musician of skill playing on his favorite instrument. The success of the large measure of surgery still done by the general practitioner, in an age of specialism, comes from such a man's familiarity with, and reliance

upon, therapeutic knowledge, and upon extreme care in adopting antiseptic measures, forced on him by his surroundings.

Control of Hemorrhage

Hemorrhage, other than that requiring torsion, or tying of vessels, is controlled by copious irrigations with hot water, under pressure, while the circulation is determined to the uninjured periphery by giving glonoin, hyoscine, atropine, and, sometimes, morphine. This complication is present less often when working under hyoscine-morphine-cactin anesthesia, the danger from fear and from nervous sensibility being reduced or wholly eliminated thereby.

A circumscribed field requiring a bloodless surface to work on calls for a suprarenal-gland preparation. This is worthy of attention also in cases of passive internal hemorrhage and in hemophilia. These latter accidents may justify the use of active styptics, say, Monsell's solution, on limited areas, while later they call for the vigorous use of nuclein, preferably hypodermically, together with the use of calcium salts and iron. In "bleeders" absolutely no unessential wound enlargement is permissible, even the extraction of a tooth or a scratch being liable to draw upon one's every resource known to arrest the bleeding. The writer knows of no rule to govern the treatment of hemorrhage in this diathesis. It often means that one must resort to the entire list of styptics as well as to the administration of all agents that have been found of value in controlling internal hemorrhage.

WORK AND WORRY

Worry never did a thing
That was worth the while—
All a world of worrying
Ever made a heart to sing
Or a lip to smile.
Worry wraps herself in woe,
Worry bows her head—
Worry never sees the glow
Where the lights of morning grow
In the sky ahead.

Work has won the victories
In the stress of strife;
Work has crossed the stormy seas,
Work has solved the mysteries
In the lore of life.
Work has never time for tears
While there's more to do—
Work, upon the path of years,
As the golden goal appears,
Sees some goal anew.

Worry sits with folded hands—
Work is on its way.
Worry lingers on the sands—
Work discovers larger lands
In the dawning day.
Worry weeps and worry sighs
Over broken toys—
Work looks up with beaming eyes
To the newer, bluer skies
And a path of joys.

Work and worry travel near,
You who seek the goal,
One with voice and visage drear,
One with heart and face of cheer
And unconquered soul.
Worry in her mourning dressed,
Work in garb of glee,
Walk beside at your behest—
Which of these upon your quest
Shall your comrade be?

—Douglas Malloch, in *National Magazine* for January, 1914.

What Others are Doing

EFFECT OF ECHINACEA UPON THE LEUKOCYTES

Echinacea is one of the favorite remedies of many members of the eclectic school of practice, who prescribe this drug in all septic conditions. While this root is said to have been employed by the Indians against snake bite, clinical observation has assigned to it alterative, antiseptic, diuretic, diaphoretic, and stimulant properties.

Echinacea seems to be one of those drugs the action of which cannot be established in the laboratory by experiments with healthy animals; if, however, it can be shown that the drug produces certain effects upon the circulation or upon the composition of the blood, which can not be explained in any other manner, the inference is justified that these effects are referable to its influence.

Dr. V. von Unruh, of New York, whose laboratory results with echinacea are cited by Professor Ellingwood in his "Materia Medica," reported, in *The Eclectic Review* for April, 1915, upon the results of his studies undertaken for the purpose of determining the exact action of this agent. Inferring from clinical observation that echinacea must act upon the leukocytes, Doctor von Unruh studied these under the influence of the drug in different diseases, and his clinical and laboratory researches, conducted through a period of more than three years, have shown that echinacea increases the phagocytic power of the leukocytes, causing in the blood effects parallel with and similar to those produced by the vaccines, without any of the objectionable features of the latter, such as local or constitutional toxic symptoms.

In determining the action of echinacea upon the leukocytes, the author investigated its influence upon the so-called blood-picture of Arneth, in which the degree of nuclear fragmentation in the neutrophile leukocytes is considered.

Arneth believes that the neutrophiles with one undivided nucleus (class 1) and those with only two fragments (class 2) are young cells and that their phagocytic power is not as decided as that of cells with greater fragmentation of nuclei. The changes in the

course of infectious diseases, in the relative frequency of the cells arranged by him under classes 1, 2, 3, 4, and 5, showed that under favorable conditions the cells belonging to the higher classes became more numerous ("shifting to the right"), while under unfavorable conditions a "shifting to the left" took place.

The prognostic significance of this observation was confirmed for tuberculosis by Dr. Jacob Kramer, of the Montefiore Home Country Sanatorium. Dr. von Unruh found that in infectious diseases in which a "shift to the left" had taken place the administration of echinacea reversed this condition, causing the more powerful phagocytes to become more numerous. He also found that leukocytosis was stimulated by the drug and that it caused the normal proportion between white and red blood-cells to be restored, while the percentage of the different neutrophils became normal. At the same time, phagocytosis became very marked, when before the administration of the drug, no sign of it had been in evidence.

Having made these observations in persons suffering from tuberculosis, pneumonia, pleurisy, diphtheria, and tonsillitis, von Unruh concludes that echinacea is of value in actively increasing and supporting the self-defense of the organism against invading pathogenic bacteria.

SPLENECTOMY IN PERNICIOUS ANEMIA

We have not attempted to give in these pages an account of the fine work which is being done by our surgeons in aiming to cure pernicious anemia by removing the spleen. This method of treatment was introduced only three years ago by three investigators (Eppinger, DeCostello, and Klemperer) working independently, and, while these men were prompted by different reasons, this procedure was followed by such marked improvement that it was quickly taken up in Germany and later in our own country.

While there is considerable difference of opinion as to the possibility of effecting a permanent cure by means of splenectomy, the testimony concerning it on the whole is

distinctly favorable. Thus, for instance, Krumbhaar (*Jour. Amer. Med. Ass.*, Sept 2, 1916, p. 723) reports a total of 153 cases in which the patients underwent this operation, as reported by the various surgeons who performed the operation. Of these 153 patients, 30 died within six weeks, presumably from the effects of the operation. Of the remaining 123, all but 24 showed definite improvement, both in their general condition and in their blood-picture. Of the 24 who survived but failed to improve, a few obviously were harmed. Of the 53 who had survived the operation for more than six weeks and remained under observation, 44 had continued to improve, but 9 of them now were exhibiting signs of relapse.

The best results from this operation are obtained when it is preceded by blood transfusion, and those who relapse after the operation still may be greatly helped by this expedient.

Personally, if called upon to treat a case of pernicious anemia not too far advanced, the present writer would seriously take under advisement the possibilities of this operation.

SIMPLE TREATMENT FOR CORYZA

Acute coryza always is an annoying condition and very frequently proves rather obstinate unless potent remedies—for instance, atropine—are taken to physiological effect. Of the many alkaline antiseptic and other solutions that have been recommended and used in the form of spray, for the local treatment of the inflamed mucous membranes, none have ever produced such decided effect that the present writer could satisfy himself as to their actual merit. Consequently, it was with a good deal of interest that he took note of an experience published by Dr. W. S. Whittemore, in *The Boston Medical and Surgical Journal* for August 17, according to which insufflations of kaolin powder seemed to clear up very promptly the coryza and tonsillitis resulting from nose and throat infections. Doctor Whittemore employed this treatment on himself and on members of his family and found that the applications were not irritating, but, rather, distinctly soothing. Similar results were obtained by use of this powder in the case of private patients.

Not long ago, the present writer was consulted by a member of the CLINIC staff, who had a very annoying acute coryza. Having in mind Doctor Whittemore's article, a trial of kaolin powder was suggested, and the

effect proved to be all that could be expected, the inflammation being allayed and the discharge of the secretion arrested in the course of half a day. It is suggested that our readers try this very simple treatment. Kaolin is an entirely "indifferent" powder. It is not absorbed and exerts no chemical action, but acts by removing bacteria from the mucous membranes and rendering them harmless by adsorption, while simultaneously binding any toxins present. The same substance has been found effective in the treatment of discharging wounds, in leukorrhea, and similar affections.

A CONTRIBUTION ON TWILIGHT SLEEP

It is refreshing to read an unbiased discussion of twilight sleep—one which, on the one hand, cannot be charged with overenthusiasm, while, on the other, recognizing the undoubted advantages of this method of producing eutocia. In the June, 1916, number of *Surgery, Gynecology and Obstetrics* (p. 156), Dr. Charles B. Reed describes his observations following the delivery of 100 women, at the Wesley Memorial Hospital of Chicago, according to a modified twilight-sleep method. He writes that 29 percent of his parturient women were practically free from pain and 50 percent entirely so. One woman said that she "suffered almost as much as when she had her menstrual flow"! By only 2 of the women relief was not admitted.

Doctor Reed declares that the objections urged against this method of analgesia are not justified. He found that there is no marked prolongation of labor; that "blue babies" are not more common with "twilight" than without it; that postpartum hemorrhage occurs just as frequently in twilight sleep as out of it—and no more so. He does not believe that the onset of the second stage is rendered unrecognizable or that symptoms of antepartum hemorrhage and uterine rupture are more likely to be obscured, providing the physician has average skill, than they would be without this use of a narcotic.

On the other hand, he finds that the strength of the woman is conserved and the convalescent period shortened; that her comfort is vastly increased; that the method does no harm, "being entirely harmless both to mother and child, when properly administered"; and, finally, it is a valuable and permanent addition to the resources of the obstetrician, much of the antagonism to it arising from an inability or an unwillingness to bestow upon a woman in labor the unre-

mitting attention and the higher technical proficiency which this procedure demands.

Contraindications to twilight sleep are: primary weakness of the labor-pains, hemorrhage, a prolapsed cord, and a lack of correlation between the size of the pelvis and the child's head.

HYPOPHYSIAL TUMOR, AND BLINDNESS

The *Therapeutische Monatshefte* for October last quotes two writers, B. Fleischer and E. Wehrli (*Klin. Monatsbl. f. Augenh.*, 1914, pp. 625 and 653) dealing with tumor of the pituitary gland and associated impairment of vision and other pathologic conditions.

Fleischer, of the Eye Clinic of Tuebingen, details 3 cases—patients ranging from 47 to 50 years in age—in which extirpation of the gland (2 reached endonasally, and by Schlosser's operation) was followed by gratifying results; the tormenting headache disappeared and the eyesight was saved; whereas blindness inevitably supervenes within a few years if hypophysectomy is abstained from.

One of the cases, that of a woman of 38 years, described by Wehrli was as follows:

Nine years previously, this woman was taken sick, resulting in premature cessation of the menses and great gain in weight; while six months ago she began to complain of headache, tiredness, and growing impairment of eyesight. By means of ophthalmological tests and skiagrams, the presence of a hypophyseal tumor was demonstrated, whereupon the patient was placed upon a course of pituitary gland (Merck's tablets), 1-10 Gram once a day, and 1-2 Gram potassium iodide three times a day. After half a year, reduction of weight, from 135, to 114 kilograms; acuteness of vision: R had risen, from 0.1, to 1.4; and L, from Hdb in 30 cm., to 0.24. The field of vision likewise was enlarged.

SUGAR FOR SHOCK

Doubtless every reader of CLINICAL MEDICINE will remember that sugar, in the form of glucose-solution, is being considerably employed by surgeons to replace hypodermoclysis with sodium-chloride solution for overcoming as well as preventing shock. This method is discussed by Doctor Burnham in *The American Journal of the Medical Sciences* for September, 1915. Doctor Burnham sets forth that the dextrose supplies energy to the cells and aids in tissue repair; that it diminishes acidosis and thus tends to remove one

of the factors in the cause of postoperative vomiting; that it neutralizes certain poisons in the circulation, such as the conjugate glyceronates; and lastly, possibly acts as a direct cardiac stimulant.

Kausch, quoted by Burnham, recommends a 7-percent solution of glucose intravenously, and 4- or 5-percent solutions by hypodermoclysis. The solution should be freshly prepared (using ordinary drinking water) and sterilized. As much as 2 or 3 liters of this solution should be introduced in the space of twenty-four hours.

In addition to its subcutaneous administration, glucose may be given, in 5-percent solution, by means of proctoclysis during anesthesia and for a period of several days after operation. The administration is continued, by the Murphy drip-method, after the patient has been returned to his bed; and Doctor Burnham declares that this should constitute a routine measure after every severe major operation. From 300 to 500 calories may be introduced into the body, by one or both of the methods named without giving discomfort to the patient.

THE ACTION OF MORPHINE AND SCOPOLAMINE UPON THE UTERUS

It is very generally believed that labor is prolonged by morphine and scopolamine (hyoscine) administered during childbirth. This view is not supported by Barbour and Copenhauer, who, in *The Journal of Pharmacology and Experimental Therapeutics* for November, 1915, page 529, report some experiments conducted with the uteri of freshly killed guinea-pigs and cats, both pregnant and nonpregnant. Solutions of morphine and scopolamine, of various degrees of concentration, were applied to the uterus, when the following effects were observed:

1. Morphine, in concentrations of from 1-20 to 1-10 percent, stimulates the isolated uterus to an increase in tone.

2. Scopolamine, in concentrations of from 1-200 to 1-20 percent, increases the tone of the isolated uterus. In this respect, therefore, it appears to be about ten times as powerful as morphine.

3. No inhibitory action upon the tone of the uterus could be obtained with either of the substances. Very high concentrations of either tend to produce a tetanic condition of the organ.

4. Neither synergism nor antagonism could be demonstrated in the direct action of these drugs upon the uterus.

In another article in the same journal, Doctor Barbour expresses the opinion that neither of the two alkaloids under consideration will cause profound changes in the activity of the pregnant or of the nonpregnant uterus of the cat. Whatever inhibitory influence they may exercise upon uterine activity can not depend upon any direct action upon this organ. If there is any delay in labor following their use, it probably is due entirely to the cerebral action of these drugs.

MANAGEMENT OF ENURESIS

A very helpful article upon how to cure bedwetting is contributed by Dr. Harry Apfel to *The New York Medical Journal* for September 2, 1916 (p. 466). His method of treatment is epitomized as follows:

1. The mother should be told the proper time for the child's bath, play, exercise, time of meals, and the time for going to bed and rising; dwelling somewhat on the importance of a properly ventilated room, the temperature of which should not exceed 65 degrees. The child should not be made too comfortable in its bed. The mother should be admonished to keep the child's bowels regular. In a few words, explain to the mother the plan of your entire campaign, then request her assistance.

2. Give to the mother a written diet-list. Specify the hour for each meal. Forbid spicy food-articles, also tea and coffee. Lay special emphasis on the point that the child must receive no liquids after 5 o'clock in the afternoon—in case of great thirst, water by the teaspoonful only may be allowed. In highly acid urine, forbid strongly acid fruits. Limit pastry, also red meats.

3. Start with the supposition that a physical examination has failed to reveal pathological lesions of the central nervous system, also that there is no adherent clitoris or vulvovaginitis (girl) or a long and narrow prepuce (boy), or calculus in the bladder. Also, that the child has no hypertrophied tonsils or adenoids. If any such condition does exist, correct it, if possible.

4. Next, direct attention to the child itself and attempt to get its confidence and cooperation—which means everything, if treatment is to be a success. Give the child a vessel and ask it to urinate right in your presence, and at the word of command make it stop and then start again. In other words, train the power of control of its bladder-sphincter. (Pisek.) Tell the mother to do

this once a day. Then give the child a blank sheet of paper, on which the days of the week are written, and ask it to keep its own record, by simply writing every morning either "yes" or "no" opposite the day of the week. If it is too young to write, let it put a cross (X) under "wet" or "dry," depending on whether it wetted the bed or not that night. This, the author finds, makes a great impression on the child's mind, especially if a prize is offered for a completely negative chart at the end of the month.

In the case of older children, especially in obstinate cases, passing a cold sound into the urethra may help a great deal when other methods fail.

5. The author believes that these are of less importance than the things mentioned above. At any rate, the value of drugs has been greatly overestimated. Of all drugs which were given a trial, atropine still holds first place for efficacy, if used properly. It is best given in an aqueous solution containing 1-2 grain of the sulphate to the ounce. Of this, give drop-doses, three times a day, for two days; then increase to 2, to 3 drops (Kerley), watching for dilated pupils and flushed cheeks—unless results are seen before this.

In anemic children, iron, especially the albuminate, is recommended. For strongly acid urine, potassium citrate should be given.

If the urine contains colon bacilli, that should be corrected with hexamethylenamine. In extremely nervous children, especially those prone to attacks of petit-mal, the bromides should be given in large doses.

A great deal of patience and perseverance is required both by patient and doctor, for in many cases the wetting stops, to return, however, as soon as treatment ceases. It is well, therefore, to continue the treatment for some time after a cure apparently has been brought about, in order that the patient may overcome the habit, of which it may not always be able to rid itself easily.

CALCIUM SULPHIDE IN INFANTILE PARALYSIS

In *The Medical World* (August, 1916, p 301), Dr. V. E. Lawrence suggests the use of calcium sulphide and echinacea in the treatment of infantile paralysis. He is confident that the use of these remedies will be effectual in cutting short this disease. He has not used the remedies personally in infantile paralysis, but he has had experience with it in scarlet

fever, smallpox and septicemia, with gratifying results.

In the September number of the same journal (p. 335), Dr. O. E. W. Swan declares that she has actually used calcium sulphide in three cases of infantile paralysis. In the first she also used aconitine to control temperature, a laxative saline and the intestinal antiseptic (sulphocarbolates) tablets. A brother of the child, who was also attacked, was treated in the same way, while another child made a good recovery under similar treatment.

Doctor Swan says she hopes never to encounter any more cases of poliomyelitis, but from her previous experience, she believes that under this treatment 95 percent would recover completely.

THE IMPORTANCE OF FOCAL INFECTIONS IN OBSCURE DISEASE-CONDITIONS

Some years ago, it was claimed that many cases of disease of unknown origin stood in direct relation to infected foci in the tonsils, and it was shown that very frequently the distressing clinical symptoms were remedied by the removal of the infected glands. Quite recently, the importance of bacterial infection existing in and around the teeth, as in alveolar pyorrhea, has been demonstrated, this condition being responsible for various affections the sources and causes of which have been very obscure and often have been labeled as "neuralgia" or similar general designations.

Since the French professor Dr. A. Poncet established "tuberculous inflammation" as a clinical entity, the possibility of more or less distinct inflammatory conditions quite distant from a demonstrable primary focus has been presented, and explained as occurring either in consequence of a dissemination of the infection through the blood stream or as a manifestation of bacterial intoxication. In all related studies it was especially the tonsil and more recently pyorrheal pus-pockets which were incriminated as the original foci of infection, and Dr. E. C. Rosenow (formerly of Chicago, now associated with the Mayo foundation in Rochester, Minnesota) has investigated and elaborated the important subject of focal infections in a manner that must prove of importance to the clinician. (See, for instance, *The Journal of the American Medical Association*, Nov. 13, 1915, p. 1687.)

In a paper read at the last session of the American Medical Association at Detroit, in

June, 1916, and published in *The Journal* for August 26, Rosenow reports on some experiments made with infectious material obtained from the tonsils and from pyorrheal pus-pockets of patients ill with various diseases.

A number of the animals infected with the organisms cultivated from these lesions acquired the affections and bacterial localizations which corresponded to those from which the bacteria originated. The interesting point was established that localizations strikingly like those in the patients were obtained, in different animals, with the bacteria as they were isolated; but, after these bacteria had been cultivated artificially for a time or after a number of successive passages through animals, the same localization, that is, the same election of certain definite tissues, no longer was manifested.

It follows that certain bacteria or certain strains of bacteria possess a decided selective action for definite tissues, for instance, the spinal cord or certain portions of it, muscular tissues, and so on. To take one example: Lesions in or about one or more of the posterior roots occurred in 83 percent of 18 animals, following the injection of streptococci from cases of brachial, intercostal, and postherpetic neuralgia. The occurrence of neuritis in 28 percent of these animals is noteworthy. This and the high incidence of lesions in the skin, namely, 28 percent (chiefly herpes), occurred in animals injected with relatively large doses. So far as can be determined, this is the first experimental demonstration of the probable nature of this form of neuralgia.

It is difficult at the present time to explain these various results or to draw definite practical inferences, beyond pointing out the necessity of ascertaining in every instance of any disease, the origin of which is obscure or which resists appropriate treatment, the existence of a possible focus of infection from which the source of the occult disease may be traced.

These focal infections by no means are always situated in the tonsils or in pyorrheal pus-pockets. Rosenow has demonstrated that often they may be traced to an infection of the appendix or to isolated focal infections elsewhere, possibly localizations that are not accessible clinically, but can be ascertained only on necropsy. Perhaps our diagnostic methods will be developed in time so that the existence of all these focal infections responsible for obscure diseases can be discovered with a reasonable degree of certainty.

Miscellaneous Articles

Prevention and Treatment of Tetanus by Antitoxin

FOR years I have been fully satisfied as to the efficiency of antitetanic serum in preventing lockjaw and have likewise been convinced that the serum is at least of value after symptoms of tetanus have made their appearance. As a matter of course, the European war offers ample opportunities for the study of a great variety of surgical problems and beliefs, more particularly because it necessitates such a large amount of emergency-surgery. Moreover, the wounds of soldiers requiring treatment practically never are clean; as a rule, they are contaminated. Thus it was that during the early months of the conflict tetanus was of frequent occurrence, until the administration of antitetanic serum as early as possible after injuries had become a routine procedure as a prophylactic measure.

According to some of the military surgeons, tetanus now is infrequent, and they attribute this to the prompt injections of antitetanic serum. On the other hand, others insist that serotherapy has not given any convincing results in tetanus, even as a prophylactic measure, and that it is ineffective after tetanus has actually made its appearance. On the whole, however, preponderating opinion insists that every wounded person should receive a prophylactic dose of antitetanic serum, no matter how insignificant the lesion, if there is any probability of its being contaminated.

In contradistinction to these opposing opinions expressed by European military surgeons, American authors are practically unanimous in asserting the efficiency of specific preventive serum-therapy of tetanus, and this opinion has received support particularly in the experience with injuries sustained during the annual Fourth of July celebrations. As to this fact, it must not be forgotten, though, that these explosive celebrations have become much less numerous than formerly, because of the crusade for a sane Independence Day some years ago instituted by *The Journal of the American*

Medical Association; nevertheless, the warning and insistent counsel repeated from year to year in all our medical journals, to have resort, in all cases of flesh-wounds, to preventive doses of antitetanic serum, has been an important factor.

In this connection, the idea suggests itself that the relative frequency of tetanus-infection and also its virulence possibly may differ in the United States and in Europe, because in the old world the war is being waged on, and in, soil that has been infected with the specific bacillus during many centuries of manuring, in that respect greatly differing from conditions obtaining in our own country. Certain it is that the experiences of American physicians and surgeons are so universally favorable to the virtues of antitetanic serum, when used as a preventive, that no medical man dare risk neglecting this precaution in all cases of wounds contaminated by soil.

It would be a mistake, however, to assume that this procedure fully meets all conditions of prophylaxis in the case of contaminated wounds, and that, with it attended to, they may be permitted to close forthwith. A little consideration will show the truth of this assertion.

The tetanus bacillus is not carried into distant organs, there setting up mechanical injuries, as is the case, for instance, in infections with the pyogenic bacteria, with the tubercle bacilli, and so forth. After having entered the wound with contaminated soil, dust, clothing or other fomites, the bacilli of tetanus remain in or near the wound without contributing directly to its seriousness, so that the wound may heal and close; but, the bacilli of tetanus continue to multiply, doing even better, for the reason that they thrive best in the absence of air. As long as the tetanus bacilli are alive and multiply, however, they produce their characteristic toxins, and these act more particularly upon the nerve-tissues; which accounts for the fact that convulsions

are the most characteristic symptoms of the disease of tetanus.

Once the toxins have reached the central nervous system, the difficulty of influencing them by means of antitoxin is immensely greater, because of the fact that the antitoxin, even if administered intravenously, does not reach the nerve-tissues in sufficient amounts to neutralize the toxins. In that case, direct treatment by injection into the spinal canal or along the nerve-trunks affords greater hope of success.

This being so, the preventive treatment of tetanus manifestly consists, not only in administering prophylactic doses of antitoxin, but, in addition, in destroying all tetanus-bacilli present in the wound. It must not be forgotten that a certain amount of antitoxin can neutralize only a corresponding quantity of toxin. If more toxin is elaborated, it must produce symptoms of intoxication, unless it is neutralized by further doses of antitoxin; and it is for this reason that the further secretion of toxins must be prevented by energetic antiseptic treatment of the wound, with a view to destroying the tetanus-bacilli harbored by it.

One of the foremost favorites among antiseptics is iodine, which, moreover, possesses the power of rendering tetanus-toxin non-toxic. It was believed, therefore, that the usual treatment of wounds, swabbing them freely with tincture of iodine, would suffice for preventing tetanus. Unfortunately, experimental investigations and clinical observation have not confirmed this opinion, and it seems that iodine can be of use only when it is applied to the infected focus, so that it can come into direct contact with the toxin before this is absorbed. There is, however, this difficulty, that iodine exercises a coagulating action upon albuminous substances and thus tends to seal up the wound, thereby only creating conditions that are favorable for the growth of the bacilli of tetanus.

It seems, then, that iodine can not be considered as the best possible antiseptic for the purpose of destroying the bacilli of tetanus, but that we must look further for such an agent. It appears to me that we have such an agent in the preparation recently elaborated by Dakin and Carrel. This antiseptic, paratoluenesodiumsulphochloramide, or, for short, chlorazene, is attracting wide attention among surgeons the world over, and it promises to prove of far greater and far more universal value than any antiseptic agent with which we now are familiar. I believe that it will be found of service in destroying

the bacilli of tetanus present in any wound, and I feel safe in recommending the free use of chlorazene-solution in the treatment of such wounds.

H. J. ACHARD.

Chicago, Ill.

[It has always been a mystery to us why so few physicians resort to tetanus-antitoxin in the treatment of perforating skin wounds, to prevent lockjaw. Veterinarians use this antitoxin as a routine in practically all cases. Is a human life worth less than that of a horse?—Ed.]

A RHAPSODY ON IODINE: ITS VALUE AS A GERMICIDE, ESPECIALLY OF THE TETANUS-GERM

Your editorial on tetanus, appearing on page 557 of the July number, beyond dispute is correct advice. However, what will those thousands do who are not financially able to bear the costs involved in using the serum, not to mention the thousands of accidents occurring in localities where the serum is not available inside of twelve or twenty-four hours? What are those victims to do—wait and risk infection while the serum is being obtained? I say, no! Pardon me for my seeming assumption of authority; but, then, I must call attention to the fact that every physician, no matter how poor or secluded from the world of commerce, has the one ideal drug that will destroy the tetanus-germ, as well as any other infectious germ, provided it is applied early enough. I mean ordinary tincture of iodine.

No physician, I am strongly tempted to say, ought to be allowed to practice medicine if he does not keep on hand a supply of tincture of iodine and always to hand for immediate use. I will say, though, without fear of contradiction, that no physician who ever to any extent has used the tincture of iodine and in years of practice has learned its many-sided applicability as a local application will be able to name any drug or combination of drugs that possesses greater germicidal power and at the same time less toxic or tissue-destroying properties. Indeed, I will venture to say that never any injury, laceration, abrasion or incised wound infected with any germ capable of producing blood-poisoning (and that is what tetanus is) will give rise to symptoms of infection, if the lesion is thoroughly swabbed out with undiluted tincture of iodine and then closely covered with apinol dressing within a reasonable time after

its infliction. And by reasonable length of time I mean two or three hours. [Apinol is a proprietary article not generally known.—Ed.]

You say I am a crank about iodine? I am, and I have ample reason to be so. After having been helped by it to cure pulmonary tuberculosis, cancer of the breast, and blood-poisoning in different stages and degrees, and to obviate the consequence of the bite of rabid dog and rattlesnake who wouldn't be a crank? "Seeing is believing, is an old maxim, but true, and no lesson is learned half so perfectly as that which comes by experience. I could cite dozens and dozens of cases of varied diseases and septic conditions in which iodine played a very important part in my hands and helped to save many a life.

Do not understand me to say that I deprecate the use of serum-treatment—far from that! I am just as much an enthusiast about those serums that have proved their life-saving power; but, still, I repeat, if you have not the needed serum on hand, trust to nothing but the full-strength tincture of iodine (and lots of it!) while you are waiting for your serum to arrive. You will find that you have made no mistake. It is 100 percent ahead of the mercury-bichloride solution in vogue for disinfecting wounds. However, do not merely wash out the wound as you ordinarily do with the bichloride-solution (as mistakes have been made with that), but go down to the very bottom of the injury with your iodine. It will not act as an escharotic as pure carbolic acid does, while, on the other hand, it destroys disease-germs and at the same time stimulates cell proliferation and granulation.

Do not take my word for these statements, for I am nothing but a country doctor, but try my way—and you will find the best friend, in the greatest number of complications, you ever had. I speak from twenty-eight years of experience—which ought to be ample time for a little consideration and thought.

Finally, a suggestion here that seems deserving of attention. Incorporate 5 or 10 percent of tincture of iodine in liquid paraffin and use it as a spray for the nose and throat, repeating two to four times a day, and I believe that you will find in this a positive preventive of infantile paralysis. Try it!

J. R. S.

—, Missouri.

[The high opinion which our correspondent entertains of the merits of tincture of iodine undoubtedly is fully justified, and under cer-

tain conditions this remedy may be counted on to supply an efficient prophylactic for tetanus. It must, however, not be forgotten that tetanus is a manifestation of a bacterial intoxication and that it is not due to the local action of the tetanus bacilli themselves. The bacterial toxin, once it is produced in or near the wound, travels with extraordinary rapidity along the nerve trunk, and other remedies are required for the treatment of the actual disease of tetanus.

However, since in all cases of infected wounds the possibility of tetanus must be kept in mind, and since the first principle of treatment demands to disinfect the wound with regard to all microorganisms that may be present, the immediate application of tincture of iodine or some other good non-toxic antiseptic always is good treatment, and it has been found very serviceable by the military surgeons in the European war. Of late, however, greater interest has been shown in the chlorine-carrying antiseptics.—Ed.]

SOME NEW THINGS IN THE THERAPEUTICS OF EMETINE

Among my dispensary-patients of last fall, there presented herself a poor woman about sixty years of age who gave the following clinical history: She had been suffering from chronic eczema of the right lower leg for over fourteen years, which condition was complicated, about seven years ago, by an ulcer resulting from scratching mosquito bites. This ulceration gradually extended until the sore measured about 5 cm. in diameter. The eczema had, at one time, been of the oozing type; although, when I first saw it, it was essentially scaly. The woman said she had tried about everything and consulted many physicians; but rather had grown worse.

My regret is, that I took no culture from the ulceration—which partook of that gangrenous dirty-gray appearance and was very sensitive to pressure—in order to ascertain whether any pyogenic organisms were present in the ulcerated area.

My method, which in this instance was somewhat in the nature of an experiment, was as follows:

After cleansing the ulcer with boremetine, full strength, I carefully bandaged the leg in cotton gauze saturated with half-strength boremetine-solution and sterile water, twice daily. Also, I administered emetine hydrochloride hypodermically, once a day for three

days, then every other day for three injections, making, in all, six injections of 1-2 grain each; with the result that the condition steadily improved, the ulcer healing and the eczema subsiding after all irritation had disappeared. I have not heard from this patient since she passed from my observation, that is, since over a year ago when she was discharged cured.

My reason for reporting this case is, because I believe emetine will find a large place and may prove of great value in the treatment of many chronic infections of the skin and its invaginations, and that it may yet be shown to have a germicidal effect on pyogens other than the *entamoeba buccalis*.

I have used emetine-hydrochloride (Abbott) injections in two cases of puerperal hemorrhage, after ergotin had failed to stop the bleeding. Each time, I was surprised to see the hemorrhage controlled by a single injection, without any distressing symptoms developing; thus being able to repair the cervix lacerations at once.

Philip A. E. Sheppard

Boston, Mass.

DOCTORS AS INSPECTORS UNDER THE HARRISON LAW

After reading all the pros and cons on this Harrison antinarcotic law, I believe that the best way would be for "Uncle Sam" to appoint physicians as inspectors. The government could select men who had practiced medicine in the country not less than fifteen years, men who are often "up against it" and have most of the "hard nuts to crack." How they do manage with this new and peculiar law God only knows—I am sure no one else does.

Some twenty-five years ago, I, with other doctors gave, hypodermically, in six hours, 5 grains of morphine sulphate, and then did not relieve the suffering in a case of injury, by accident, to the nerves of the victim's forearm and hand. We had to leave that man a solution of morphine. Although he took the narcotic for days, it did no harm, neither did it relieve the pain to any great extent. Nothing seemed to do him any good, yet, this man never had taken alcohol or any opiate in any form, so far as we could find out. Just one of those strange cases.

I must repeat that this new law is a puzzle to many physicians as to what or how they should do about it. If you, dear Editor, can help my rural brethren, or, in fact, any of us doctors, to find the drug that will take the

place of opiates, or can help to change this troublesome law, so that the conscientious physician is not placed in the position that now he is, then you will be a friend worth having, indeed.

B. MOSBY SMITH.

Los Angeles, Calif.

CORNEAL ULCERS

To the man in general practice, the man on the firing-line, the man who comes face to face with unexpected conditions, who has no time for consultation by reading authorities or is too remote from his confrères to call consultation, who stands completely alone and must at once and from his own initiative act promptly, safely, and well, in order to ameliorate suffering, save limb or limbs, organs or life itself, permit me this morning, before you start out on your busy round, to tell you of one or two things that have come to my attention during a practice extending over forty busy years.

We will now take up the subject of corneal ulcers.

It goes without saying, of course, that the eye-specialist knows all about it; but then, his office is far away and at present his fine equipment is not at your immediate disposal. It may be that he may be found listening to our talk before we get through. In the meantime, you may be facing a rapidly growing corneal ulcer, in the farm-house, the cabin, the lumber-camp, on the prairie or in the mines. The question is, What are you going to do about it? It is necessary for you to get very safely and scientifically busy, or somebody will lose the sight of an eye, maybe of two eyes. He may become totally blind. You will lose prestige.

I was taught, among many other good things handed down to me by my preceptors, that a "big dose of epsom salt is a mighty good thing for a sore eye." No reason assigned—with them, the end justified the means. Later, I found out why; which I shall show later. Now I will outline my treatment.

First of all, irrigate the eye with a 4-percent cocaine solution. This gives relief from pain and dilates the pupil, thus drawing back to safety the imperiled iris. Irrigate constantly or at frequent intervals with boric-acid solution, *very hot* (the eyeball will bear water so hot that it would burn the skin around the eye), either by means of an eyecup or by immersing the eye in a cup overflowing full with the solution. At first trial, this seems

THE TREATMENT OF ENLARGED PROSTATE GLAND

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impossible, but the patient soon will learn how to do this, the relief from pain and inflammation experienced encouraging him in this; being told to hold his head far over and dip his eye into the liquid near the far side of the cup. In the intervals or if the condition does not call for this frequent bathing, put into the eye one or two drops of castor-oil. This, when dropped into an eye inflamed from any cause, will prove soothing and allow of the free movement of the eyeball without giving pain. This is worth knowing! Be sure the oil is of best grade and fresh.

You know that the "onion-skin" layers of the cornea, when ulcerated, will curl and roll in and hold the disease-germs in such a way that external applications of washes and germicides fail to arrest the eroding, phagedenic action on the inner and under sides of the ulcer. Now, then, take a medicine-dropper, the end of which is smooth and free from chipping or fractures and having a rubber nipple that is large and of good action, fill it full of water, and sterilize by boiling. When ready for use, place point of the tube directly over the ulcer, press out the air in the bulb, then relax the pressure on the bulb. The edges of the ulcer will begin to unroll under the suction. Jerk the dropper off quickly, and the edges will come out still more. Immediately drop in a solution of argyrol or protargol, then after a brief interval irrigate with boric-acid solution. This is the technic. A word to the wise is sufficient.

Meantime, we have been looking after the patient's general condition. He has been given tablets of calomel, 1-10 grain, till 5 have been taken, one tablet every five minutes; the tablets being chewed. Also, as soon as the tablets were all taken, we have had him take, dissolved in *hot water*, a heaping tablespoonful of epsom salt, followed by a copious draught of cold water. Repeat the epsom salt in four hours, a dose of 1-10 grain calomel and soda to be given morning, noon, and night for five days.

Immediately after the epsom salt has been taken, the patient is put to bed and then sponged every half hour with a solution of epsom salt in warm water, in the proportion of 1 to 32 (or, a heaping tablespoonful to a quart). It is best to have several gallons prepared at once.

What is the object of these baths? We take in and utilize oxygen, and we produce and throw off carbon dioxide. Epsom salt is magnesium sulphate, and magnesium sulphate has an affinity for carbon dioxide.

The patient is to be bathed all over and kept between sheets or, when the solution can be applied so as to reach the entire outside surface of the body, the external bath draws out from under the imbricated covering of the cuticle the imprisoned carbon dioxide. (By way of parenthesis: This system of medication is of universal therapeutic application and will help you out in many a severe case of fever or retained bodily poisons.)

The epsom salt in the alimentary canal sweeps out the fecal contents, and, so does for the inside lining of the body what it is doing for the outside. You have depleted the system by skin and mucous membrane, dilated the capillaries and flushed them with rapidly moving blood, drawn out the curled-in edges of the ulcer. You have applied the germicide to the germs *in situ*, removed the pain and inflammation from the eye, and by the use of the castor-oil enabled the orb to rotate without friction. You have cured the man.

To cure, is, to take care of—you have saved an eye, perhaps a life; surely, a reputation. You have done a fifty-dollar job, for which you may get one dollar or maybe only thanks for treating a sore eye. The patient doesn't know, nor ever will; but, you know and I know that you have done a God-like thing, for, we are as gods, knowing good and evil, and gods because we choose the good. Do I put it too strong?

He who rides through the darkest nights
And breasts the swollen streams in his
errands of mercy
Can have no title too high bestowed
on him.

C. S. COPE.

Detroit, Mich.

THE TREATMENT OF ENLARGED PROSTATE GLAND

It has been my privilege to read several interesting articles on the treatment of enlarged prostate gland, contributed to your valuable journal by Dr. W. J. Robinson, of New York City. Now, Holy Writ tells us that all men are made of one flesh and blood, but it does not say, of one mind. So, while I admire the Doctor's statements from a strictly scientific point of view, I am forced to conclude, after thirty-five years of experience in treating the condition in question, in men in the various walks of life, that an enlarged prostate gland, with all its attending complications, cannot be permanently cured by means of massage or the high-frequency

current, and the physician cannot promise absolute relief from future incident suffering.

If I am correct in my contention that the early removal of the middle lobe of the prostate gland is the only way in which a complete cure can be effected and the sufferer saved from all the attending ill, then I ask, Why temporize? Why not operate in its earlier manifestations. and thus save some poor fellow man from a living hell?

Let me cite two cases that have lately come under my observation.

A man, 72 years of age, had suffered from enlargement of the middle lobe of the prostate gland for eight years; had tried all methods of treatment, but received only temporary relief. He was operated upon eighteen months ago, at the Hahneman Hospital, and now is entirely well.

A brother physician, 60 years of age, had suffered for five years from enlarged prostate gland. He was a busy man, and for a full year, in making his calls, rode in his automobile sitting on a pillow. He despaired of ever being cured, because all these temporizing methods had failed him absolutely. He told me that he had reached the end of his rope. He either must get permanent relief or he would quietly step out into the great beyond. I persuaded him to lay aside his professional work and have the diseased gland removed by the high operation. He went to the Hahneman Hospital in New York and had the operation performed, remaining six weeks building up. Today I met him, and he says he hardly could realize that he ever had had such a trouble. He looks the picture of health and is again attending to his practice.

Let me add: We can not serve two masters. Let mine be for an operation. Three weeks in Old Hahnemann, and then for good health once more.

CHAS. H. WILSON.

Middletown, N. Y.

SMALLPOX—AND THE CALCIUM-SULPHIDE TREATMENT

Apply this pink slip (my check) to the striped wrapper on my journal and see it change color! I would not miss the CLINIC, for anything. I like to read of the delights experienced by the occasional discoverers of calcium sulphide and the "awful" doses they give.

Grandfather was a physician, father was a dentist, but my ambitions were frowned upon when they tended toward matters

medical, and, so, I drifted into the newspaper-game—and there is where this story opens.

Ben Hackett loafed around the office a great deal and, aside from being in the enjoyment of a constant and vigorous supply of boils, began to exhale an ever-increasing odor that was abominable—some doctor was giving him 8 grains of calcium sulphide a day for his "comforters."

March 26, 1901, we were quarantined because of smallpox in the house—my wife had an attack of confluent type. Hackett's boils and my wife's awful "mattery" condition suggested calcium sulphide to me, and I suggested the suggestion to the doctors. "No, it will cause her to abort", they said. After she had been in a comatose condition for sixty hours, the doctors pronounced her past hope. Then I took a chance. I did not know, but I could do no worse than hasten the inevitable. Besides, Hackett's boils kept haunting me.

I got a pound each of flowers of sulphur, carbolic acid in crystals, hydrogen peroxide, and about 350 1-grain coated calcium-sulphide pills, and a package of compound licorice-powder.

I bathed the sick woman in phenolized water, dusted her with plenty of the sulphur, to absorb the pus and prevent the gown and sheets from sticking to her. I attempted to cleanse her mouth with a tablespoonful of hydrogen peroxide—and, horror, she swallowed it! (I then believed it to be poisonous taken internally, in common with many of the laity today.) Before I could collect my wits to call help she vomited—description unnecessary to the initiated.

"If Hackett took 8 grains of that calcium sulphide for a few boils, 40 grains for my wife, who is easily five times worse, will be about right," I reasoned. So, I gave her 22 of the pills, and then a teaspoonful of the licorice-powder on top. By now, I myself was feeling pretty bad, the "shot" were as thick as they could be under my skin. So, I took 11 grains of the sulphide and the licorice-powder. In about an hour my wife vomited another mass of pus, and in it I saw some of the undissolved pills. Soon afterward, I began to feel "ticklish," but believed it due to the "scenery" just removed and the fact that I had not been in bed for nine times twenty-four hours. Consequently, I took a small drink of whisky. After a while I gave another 22 grains and a dose of powder to my wife, and when she began to show symptoms of nausea I gave her whisky. Soon after, she opened what she could of her eyes and asked

for something to eat. A cup of hot milk satisfied her, but I called a doctor, because I believed it the "rally before death." I was scientifically assured, though, that it was improvement. I slept that night.

In the morning, I repeated the bath and dosage, and by about noon the patient's bowels moved—oh, oh! oh!! As we both felt considerably better, I reduced her night-dose to 20 and mine to 10 grains, repeating it the next morning. Her next two doses totaled 36 grains, then 32, then 28, and by that time every one of her pustules had dried up and the scabs come off. Twenty-seven days later she gave birth to a 9 1-2-pound boy, now a big healthy boy of fifteen. Of the thousands of "shot" under my skin, only two developed into pustules.

As stated, I was not then a physician; but after this I was called to a good many homes where one was down with smallpox and others were "coming"—the same treatment was the rule, "because it worked," that is, because those down got up and those up staid up.

I have as little fear of an attack of variola, under the above treatment, as I have of a midnight call for croup, with calceidin and apomorphine in my handy case.

Incidentally, I have lately received a No. 8 case. If it were the only one in the world, money couldn't buy it—I had what I needed—and, brother, doesn't it make a fellow feel "lumpy" in the throat when that awful agony goes out of a mother's eyes and the baby cuddles down in a natural sleep!

ALBERT A. DAVIS.

Port Angeles, Wash.

THE TREATMENT OF GENITOURINARY DISEASES WITH ELECTRO-COLLOIDAL IODINE

The treatment of genitourinary diseases, particularly the treatment of specific urethral infections, is an ever fruitful source for discussion. I need not dwell upon the annoyance to the physician and the disgust of the patient when, after an apparent cure, the latter returns with a fresh outbreak of the discharge or with sequelæ of the infection, the reasons for which need not be discussed here. These accidents, I have found, may be avoided by treating such cases with the electrocolloidal iodines as made by Viel.

In gonorrheal infections, it should always be borne in mind that in 90 percent of the cases a posterior urethral infection is present. If this fact is overlooked, there will be absence of results, no matter what therapeutic remedy

is employed. To my observance of this posterior infection and to my strict adherence to the technic as given in the literature on the electrocolloidal iodine I ascribe my success in treating this condition.

The urethra should first be washed out with a mild boric-acid solution, fairly warm. The syringes and catheters must be perfectly dry and sterile. Lubricants must not contain water. For a few visits at the beginning of treatment, it is better to inject enough of the iodine preparation in the urethra to fill it, the patient retaining the injection for ten minutes and then allowing it to drain out slowly, without stripping. The diet and other management should be as suggested in the textbooks. When using these remedies, it is better to pour out the necessary amounts into a small graduate which is placed in hot water; but care must be taken that the water covers only about three-fourths of the graduate. The heat enhances the action and, besides this, renders the preparations more limpid. The following cases from practice may serve for illustration.

Case 1. Man, age 23. Acute gonorrhea; complicating balanitis. Deep injection of electrocolloidal iodine three times daily for eight days. Application of a dressing of the same remedy, held by bandage over the parts affected, daily for eight days. Internal doses two or three times daily. Discharged cured. Reported a few times for examination during a period of three weeks. No reappearance.

Case 2. Man, age 28. Acute anterior and posterior gonorrhea. Deep injections daily for ten successive days. No complications at all. Reported one week after interruption of treatment. No need for further attention.

Case 3. Youth, age 17. Acute anterior gonorrhea with complicating herpes. Urethral injection of electrocolloidal iodine three times daily; later, daily deep injections. Topical dressing for existing herpes cured the condition after four applications. Parts were well smeared, then covered with wool, and the dressing was changed once in twenty four hours. Kept on with injections for twelve days in order to be sure. Patient discharged. No return of either trouble.

Case 4. Man, age 25. Chronic urethritis. Had been treated for a long period. Sound massage, bladder washes, all kind of capsules and pills and mixtures, and injections of various medicaments were tried. The patient worried and troubled and became utterly discouraged. No stricture and no prostatic trouble was present. Here, I used deep injections of electrocolloidal iodine, after

washing out the bladder, also the same remedy internally.

I continued daily treatments for two weeks, although the morning-drop disappeared during the first week. No return. Cured. Very comfortable both day and night while under treatment.

Case 5. Man, age 59. Mild chronic pyelonephritis, with mild acute croupous exacerbation; chronic prostatitis, with hypertrophy of prostate gland, urethritis, and irritation of bladder. Frequency of urination followed by pain, and quite copious discharge from the urethra, this coming from the prostate gland, and so forth, were the annoying symptoms. I used the ordinary bladder washes, internal remedies, and so forth, but without success. Then I washed out the bladder with mild boric-acid solution, then injected the iodine. He responded at once. I did this for ten successive days, then every other day. The relief was marked, all frequency and pain having disappeared. Then I began using topical applications in the form of rectal suppositories inserted each night. The last analysis of the urine showed betterment. There were large numbers of the bacillus coli communis present in the urine, but these have diminished. He is using the Bulgarian bacillus tablets with apparently good results. Patient still under treatment.

Case 6. Man, age 62. Lithemia, with mild hemorrhage from the pelvis of the kidneys and mild pyelitis, also mild interstitial nephritis. Irritation of bladder. Frequency of urination, with pain following; pain in the back, weakness, and so forth, distressed him greatly. Bladder lavage with warm boric-acid solution, followed by instillation of electrocolloidal iodine into the bladder every three days, has made him a great deal better. Patient still under treatment.

Case 7. Man, age 26. Pustular acne of 18 years' standing. Furuncles opened as they appeared, then the iodine dressing was applied on neck and face nightly. Marked improvement followed this. After two months of treatment discharged cured.

Case 8. Man, age 30. Acute epididymitis. Intense pain and swelling. Iodine dressing freely. Covered with wool. Had him wear a good suspensory. Dressing was changed once in twenty-four hours. First dressing gave instant relief. On the fifth day all swelling had gone. Patient still wears the suspensory bandage, but the dressing is no longer needed.

Case 9. Man, age 63. Acute orchitis. Much pain, some fever, swelling of right testicle, and so forth. Was called to his home. Applied dressing of electrocolloidal iodine freely, then covered with wool. Ordered a suspensory to be worn. Gave a sedative tablet, to relieve the pain. In twenty-four hours, all pain had disappeared and he is able to be up and about. I have ordered the dressing only during the night.

Case 10. Man, age 40. Acute epididymitis. Same treatment as in case 9. Marked relief in twenty-four hours.

Before I had tested the topical use of iodine in this form, I always used ichthyol, 50 percent in glycerin; in fact, followed out the treatment suggested by Guiteras, of New York, in his work on urology. Now ichthyol is too expensive, as 4 ounces of it cost over 7 dollars. I find that the dressing indicated gives more immediate relief.

FRANK MACKIE JOHNSON.

Boston, Mass.

FRACTIONAL DOSAGE OF SALICYLIC ACID FOR INFLAMMATORY RHEUMATISM

Ever since Kolbe, in the year 1874, by his invention made salicylic acid available for general practice, this substance has been esteemed the best, perhaps the very best, remedy for acute articular rheumatism; yet, although its specific virtues are being universally acknowledged, for a long time this substance has been prescribed but sporadically in its original form of the free, uncombined acid.

Very early in its therapeutic career objections began to be raised against this medication, the first, and most important, being, that it was so sparingly soluble, and then—largely grounding upon this indisputable fact—that in its free state it exerted an irritant and corrosive action upon the gastric mucosa and after its entrance into the circulation (also as free salicylic acid) it not alone produces irritation of the renal structures, but gives rise to constitutional disturbances in general and specifically to various unwelcome side-effects, notably derangements of the auditory apparatus and vision, to tendency to vomiting, dyspnea, and other toxic symptoms.

As a consequence of these accusations, the mitigated sodium salt of salicylic acid early became the vogue, the uncombined acid soon falling into "innocuous desuetude." Innocuous? No, not quite so—as J. Zadeck.

of the Municipal Hospital of Neuukoelln, Germany, essays to prove in a preliminary publication (*Muench. Med. Woch.*, May 14, 1915, p. 614); for, he and his associates consider that these many years the entire medical profession has been chasing a phantom. As evidence of the truth of his assertion, Doctor Zadeck points to the ever-multiplying salts and condensations and similar derivatives of the salicylic radicle, of which the latter is the sole remedial element.

This fact, he maintains, should demonstrate to all that, beginning with sodium salicylate (suggested by Senator), up to aspirin and the later compound esters, all have been relative failures in the relief and cure of the painful disease in the treatment of which the prototype originally gained fame. (The same phenomenon is witnessed in the case of other diseases, the remedies for which multiply in proportion to the comparative or total lack of curative virtues of all those proposed and haphazardly prescribed.) Moreover—a fact universally overlooked—those newer derivatives finding greatest favor are those in which, successively in their appearance, the salicylic radicle (in the respective synthetics) is chemically more and more loosely attached; in other words, more readily split off and set free in the animal-economy.

And here we come to one of the principal arguments. As early as 1876 (two years after its introduction as a cure for inflammatory rheumatism), Stricker (*Berlin. Klin. Woch.*, 1876, Nos. 1, 2, 8) devised a rigid plan of dosage for securing the maximum of benefit with a minimum of disadvantages from the use of salicylic acid; and therapeutic results were assured from this regimen. But with the advent of the placebos, this proved principle of administering the medicament—and upon which assured success depended—was lost sight of and a haphazard system of dosage took its place. And, furthermore, as one new derivative after the other was put upon the drug-market, not alone was the sphere of indications widened beyond that of purely acute articular rheumatism (anti-neuralgic, antithermic, antihemorrhagic, and so on), but emphasis began to be placed more and more upon a given preparation's harmlessness in comparison with its predecessors, and, above all, free salicylic acid.

Here, the author submits, are reasons a plenty why the treatment of inflammatory rheumatism is not as satisfactory as it might, and should, be; limited successes with the placebos not being denied, of course.

At this point, Doctor Zadeck asserts, pointedly and unqualifiedly, that: salicylic acid (free and combined) is unexcelled as a therapeutic agent for the cure of acute articular rheumatism, provided that the exact procedure laid down by Stricker is strictly adhered to; that, the diagnosis being correct, the remedy is harmless; that under these circumstances it gives rise to such slight side-effects only as eventually constitute the unavoidable expression of every potent remedy, and as such may unhesitatingly be taken into the bargain.

As for the various deleterious effects charged against salicylic acid (free), the author admits that they all may, perhaps, be produced to some extent; just the same, they all represent nothing but innocuous concomitant phenomena that never leave any permanent damage: in fact, during an experience of many years, neither the author nor his colleagues were ever tempted to desist from their practice as herein set forth. Serious general symptoms were never observed, while any "gastric corrosions" at no time have given them alarm. The technic being correct, these symptoms remain within the "ordinary" (Stricker) limits, and can well be overlooked in the presence of the prompt and permanent objective and subjective improvement of the patient.

In this connection, it is pointed out that as the first sign of impending toxication may be considered the marked deepening of the respirations and a peculiar dyspnea. This actually was observed to set in in a very few instances, but no complications or lasting results occurred. Indeed, an early resumption of the medication followed, since *the full and complete therapeutic effect of the drug had been attained with the appearance of deepened respiration.*

This therapeutic effect, needless to state, is evidenced by a prompt decline of the patient's temperature and, more important, recession of the inflammatory swelling of the joints; and, with this, the almost complete cessation of the excruciating pains and restoration of mobility.

This happy result, however, Doctor Zadeck continues, cannot be secured as promptly and, yet, in so simple and harmless a way by any other means than with salicylic acid administered in typical dosage—and it is principally, because of these considerations that he urges a return to the use of the plain mother-drug. No doubt, he adds, similar results can be secured with the various salicyl-derivatives; and, they are entirely superflu-

ous, at all events, for reasons already indicated, while, naturally correspondingly larger amounts must be ingested in order to get the needed dose of the fundamental salicyl-radicale. Certainly, since the side-effects in every respect must be the same, reason speaks for adhering to the simpler substance if by a special procedure these can be reduced to a minimum. And this entirely neglects the question of economy.

It was just with the view to obviating these side-effects that Stricker devised his plan of dosing, and the idea, concretely, is, to administer plain salicylic acid in reduced but frequently repeated doses; 1-2 to 1 Gram (8 to 16 grains) once every hour until the effects above described are attained.

This formula was modified some years ago in the interest of the attendant as well as the patient, by extending the interval to two hours, but doubling the dose, to now 1 or 2 Grams (given in capsules or cachets); no difference in therapeutic or recognized undesirable effects being noticeable. The total daily dose ranges between 8 and 12 Grams, or, from 120 to 180 grains. The essential, important feature is that the doses be small and the short intervals scrupulously regular; thereby ensuring an uninterrupted pharmacodynamic action and affording resting-pauses for the stomach. In addition to the fact that the placebos are being prescribed in greatly reduced dosage the foregoing important point appears to have lapsed into general forgetfulness.

In this connection the reasons for this old-new mode of drugging [Entirely in line with Burggrævian practice.—ED.], also, why all succedanea can be spared may be elucidated. Other substances, of entirely different chemical constitution (e. g., atophan), have been found to affect inflammatory rheumatism in the same favorable manner as does the salicyl-radicale; and that, exclusively, is—to repeat—the abatement of the febrile and the painful inflammatory condition of the joints. No other therapeutic effect is expected from any of the specific antirheumatics. None of these medicaments (nor any other recognized therapeutics—baths, for instance) is capable of preventing relapses or inflammatory cardiac complications.

While, then, none of the prized antirheumatic specifics are truly such, it behooves the medical attendant to afford that relief so urgently demanded by the victim, and the method proposed furnishes the means. Given the typical symptomatology, he has before him the clear indication for instituting the

typical salicyl-therapy as herein explicated. Whenever there are pronounced rheumatic fever and painful inflamed joints, whether primary or recurrent, this therapy is sure to be crowned with success.

And right here, following the author: if the patient can be freed of his sufferings and made to feel "well" within twelve—eighteen—twenty-four—at most thirty-six hours, he will be quite content to suffer temporarily some nausea and noises in the ears; for, the force of the attack is broken, and *he comes out better* than under the current "harmless" regimen of "innocuous" salicylic synthetics or salts and cautious dosage. This latter course inevitably means a protraction of the febrile and painful condition over days and weeks, and, with it, the ingestion, for a prolonged period, of the salicylic preparation.

The obvious deduction follows: Salicylic acid (nor its congeners) does not prevent the deleterious organic degenerations consequent upon rheumatism; the undesirable side-effect produced by it can be minimized by the heroic course recommended, inasmuch as the noxious chemical must do more harm the longer the system is subjected to its influence; while, with the prolongation of the rheumatic process, chances for the organic changes are multiplied. The cogency or bearing of the following, textually connected (and literally rendered), passage is not quite clear to the abstractor: "hence, convinced of the necessity of the amount of salicylic acid coursing in the blood in a high degree of concentration, we welcome precisely that very insolubility that favors this demand, and, consequently reject everything calculated to enhance the solubility and, thus, eliminability of the salicylic acid; therefore, as a general rule, do not [simultaneously] administer alkalis."

However, as was already pointed out by Stricker, one empirically established rule must not be overlooked: The same or only slightly diminished dosage must be continued for fully eight days after all fever has disappeared, individual conditions controlling the size of the doses; for, although there is no guarantee, this measure does serve in a large degree to act as a prophylactic against relapses or heart complications, inasmuch as the rapid abatement of the acute symptoms favors a more normal course of the disease.

The author adds that this heroic course has been followed in the presence, in "innumerable" instances, of old as well as acute (recurrent) cases of cardiac affections, without at all taking cognizance of these, and always with the same marked results. Consequently,

heart diseases constitute no more a contraindication than do existing tuberculosis, diabetes, lues, and other constitutional diseases.

In conclusion, a very few cases of rheumatism were encountered in which the treatment under consideration proved absolutely unavailing.

Author's résumé: Pure salicylic acid has been unjustly rejected in the treatment of acute rheumatism of the joints. A correct technic and method, besides a certain experience (presupposed), constitutes a medication unsurpassed in celerity of action and, yet, harmless, in fact, decidedly helpful, in that it obviates all torturing procedures and manipulations (baths, and the like); consequently, it is excellently adapted for the treatment of rheumatic affections whenever swelling and inflammatory manifestations, generally associated with fever, have set in. At the same time, all derivatives of salicylic acid, however justified and appropriate they may be in other conditions, are entirely dispensable and superfluous, if not, indeed, harmful.

ADOLF G. VOGELER.

Chicago, Ill.

[The doses of salicylic acid recommended in this article will seem exceedingly large to most of us, and we question very much the tolerance of many persons for 120 to 180 grains of salicylic acid a day, to be "continued [even in reduced dosage] for fully eight days after all fever has disappeared." It may be that German patients will "stand for" more than American patients; certainly, none of mine are so tractable as to endure the terrific gastric distress, head-noises, and other side-effects of salicylic-acid medication on this scale, even if these disagreeable effects should prove to be "innocuous." The idea of frequently repeated administration *at uniform intervals* appeals to us; but we much prefer "*small doses frequently repeated.*" The hint, that "the full and complete therapeutic effect of the drug had been attained with the appearance of deepened respiration," should be investigated by other physicians, as well as the suggested signs of salicylic-acid toxicity.

Salicylic acid has a well-established place in the treatment of rheumatism; it is valuable beyond doubt, but it ought not to be considered the sole remedy or even the best remedy in every case. Indeed, we have more faith in *thorough elimination*. In treating these cases we believe in a low-protein, meatless diet; in painstaking and persistent

purgation, plus colonic cleansing; in intestinal antiseptics, always with appropriate remedies; in flushing the capillaries by hot-baths, hot epsom-salt compresses or by baking; in alkalinization with remedies like calcalith or sodoxylin; perhaps, also, in streptococcic bacterins, although with this we have had little experience.

We want to know what "the family" think about rheumatism. The subject must be of interest to you.—ED.]

SOME SPECIAL VIRTUES OF ACETANILID

The American people seem always to be going from one extreme to the other. The sage maxim "*Medio tutissimus ibis*" has never become popular on this side of the Atlantic. In fact, if the average American were to be advised, from motives of precaution, to take the middle car of a railway train, he probably would decline, on the ground that he would be caught either in a head-on or a rear-end collision.

Thus, having passed through the period of extravagant laudation, acetanilid seems now to be falling into the state of complete desuetude that usually follows. Nevertheless, it is too powerful and too valuable a remedy to be allowed to go into the discard. Its power of promptly and tremendously reducing febrile temperature fits it for many cases where nothing else quite takes its place.

In sunstroke and in temperatures exceeding 105 degrees occurring in the course of any malady, there is imminent peril of speedy death from paralysis of the brain. Whether acetanilid exerts any influence over the causal factors of the hyperpyrexia is not the question—while we argue the point the patient dies. The fever-heat is the direct cause of death, and this temperature must be brought down to a safe point very quickly; and for this we have no remedies equal to acetanilid, except the direct application of cold (which may not be available).

We may even have to give, at once, full maximum doses of the drug to get its effect, for this is one of the remedies to which we can not apply the mathematical rule and say: If ten grains of acetanilid reduce the temperature ten degrees, one grain will reduce it one degree; two grains, two degrees; and so on.

Like pilocarpine, acetanilid acts all at once, fully and decidedly, or not at all. I have never succeeded in securing "slight perspiration" from pilocarpine. Give a milligram

every five minutes, and you get no appreciable effect until ten doses have been taken, and then the patient swears the sweat is running through the mattress to the floor.

So with acetanilid: give a grain every half hour, but you get little febrile depression, until the temperature drops to or below normal with a suddenness that sends one skurrying for stimulants to combat collapse.

In temperatures below 105° F., the coal-tar preparations have been almost completely superseded by the defervescent alkaloids, which are safer, at least as effective, and far more easily regulated. Besides, the action of aconitine, and especially of veratrine, in opening the eliminants and letting toxins out of the system is so necessary in all infectious fevers that they have deservedly replaced the coal-tar synthetics.

But acetanilid has other uses, and for them it is invariably employed as the *principium*, the leading ingredient of a combination. An infinite number of compounds have appeared and have won popularity. Here are a few examples:

(a) Acetanilid, grs. 3 1-2; sodium bromide, gr. 1; caffeine, gr. 1-4; codeine sulphate, gr. 1-4. This is a good formula for severe pains, inflammatory, neuralgic or respiratory. It may be given every two to four hours, but needs watching, as cyanosis may appear. (b) Acetanilid, grs. 1 2-5; caffeine, gr. 1-5; sodium bicarbonate, gr. 2-5. For abdominal pains; repeat every hour. (c) Acetanilid, grs. 2 1-2; quinine sulphate, grs. 2 1-2. For high temperature in malaria; an excellent combination. Repeat every two hours till fever falls. (d) Acetanilid, grs. 3 1-2; caffeine, gr. 1-2; sodium bicarbonate, gr. 1. For severe neuralgias or headaches, provided the bowels are well freed first. Once in two to four hours is dosage enough. (e) Acetanilid, grs. 2; ammonium bicarbonate, gr. 1-8; veratrine hydrochloride, gr. 1-128. A good combination for fevers when there is severe headache also. Give every hour. I like it the best of all these compounds, because it does the work, giving speedy and permanent relief. Besides, the addition of veratrine supplies the one thing lacking in acetanilid—elimination of toxins. The dose of ammonia is too small to do much, but it slightly relieves acidity and acts as a mild stimulant.

Still another, powerful, combination is that of acetanilid, sodium salicylate, and ammonium bromide, equal parts. Try this in your next "mean" case of acute rheumatic fever, when the patient is howling for quick

relief. Give ten grains every one or two hours, till relief.

Nearly every active clinician has his own favorite formulas for acetanilid, and when a man finds a happy combination he is apt to stick to it. I used the last-named one for many years and thought it too good to warrant experimenting, but this veratrine compound is fine.

DIAGNOSIS. URINARY EXAMINATIONS. DIABETES

The writer has been impressed lately with what seem to be facts as to certain practitioners who have been successful from a business point of view, yet, who do not cure their patients—at least not as many as they should, or might, cure. The average doctor often does not take the time to make a correct diagnosis: a few questions are asked, the patient is given some purgative medicine, and he's ready for the next. The physick removes some of the intestinal mess, and, of course, the ailing person feels better for a few days or weeks; and is satisfied. Before long, though, he is obliged to consult the doctor again.

Query No. 6055, page 1174, December, 1915, issue, of THE AMERICAN JOURNAL OF CLINICAL MEDICINE impressed me profoundly—and sadly. The doctor (I presume) asked why iodine was used by surgeons, and what is an ampule. These questions, and the others, look ridiculous, really, and need no comment.

I wish every general practitioner in the world could, and would, read what Dr. George F. Butler has to say to us about the treatment of chronic diseases. (See the January and March numbers.) No man can do a chronic sufferer any good without knowing what is the matter with him. In acute diseases, he has standing at his back a better man than he himself is (namely, the natural forces) that will do the work, anyway—if he will not interfere.

Now, here we come to the point, and I am going to relate my own experience with a patient just a few days ago, and which is only one of many. You can do just as I did, if you will, but I venture to say that comparatively few physicians make a habit of carefully examining their patients' urine.

Do you think the urine is of no importance as an outlet for a cleanup? In this case, the urine furnished me with a key which served me to arrive at a correct conclusion, and thus to the diagnosis. It is very little trouble to

press a piece of litmus-paper to the patient's tongue; and to know whether the saliva is acid, alkaline or neither is of some value. It is information!

I was talking to this man socially, when he turned the conversation to his complaint. I did not know that he was a sufferer. Said he: "Doctor, for three years I have been the rounds, but no doctor yet has done me much good. I have the headache nearly all the time. My stomach is out of fix. I have taken enough pepsins and digestants to swim a mule. My bowels act occasionally, and occasionally I pass a handful of jelly about like the white of an egg, but no blood. I sleep well, but get up with the headache. I have worked most of the time, but never feel like doing so. The joint of my neck is always sore and it hurts to turn my head. I have a very good appetite most of the time."

I asked him whether he ever had his urine examined. No, nobody ever had done or suggested that. I then told him that most likely sugar, indican, and probably other abnormal things were present in his urine and that he suffered from general acidemia. He thereupon procured me a sample of his urine extemporaneously for an immediate test, which gave these results: specific gravity, 1030; very acid; indican present; sugar present. This was enough in the way of tests (except for albumin, which was absent), and they were made in five minutes.

Now, here is a pointer: A good test for sugar is as follows: Mix two-thirds of the suspected urine with one-third of a 5-percent solution of potassium hydrate (caustic potassa) and a pinch of bismuth subnitrate, then boil for two minutes in a capacious test tube. If sugar is present, a grayish, brown or black precipitate will appear, the tint depending upon the amount of sugar present. For indican, mix in the proportion of two-thirds of urine and one-third of c. p. hydrochloric acid, add a few drops of solution of peroxide of hydrogen or a solution of potassium permanganate, mix, then add 10 drops of chloroform, and shake well. If indican is present, the chloroform will dissolve it out and make a shade of blue proportionate to the relative amount of indican present. However, to be real nice about it, I suggest that you send to The Abbott Laboratories and get an indican-meter, also an acidimeter, together with the reagents all combined. It will pay you well.

"Now let me ask you. Did you ever drink alcoholics to excess?" "No, doctor, I never was drunk in my life." Asking further, I found that up to about seven years ago this

man had drunk some whisky and beer every day for about two years. And here I will say, most people think drinking to excess means "getting drunk" every day.

The man's liver was found to be slightly enlarged and a little harder than normal. So, now you have the diagnosis. Then I explained:

"You have liver trouble. Very probably you will never be cured of this trouble, but you can improve your condition by proper diet and medication, to the extent of relieving your headache, which results from faulty elimination and body-chemistry. We can call it amyloid liver. The stomach is not wrong, but you have stasis in the small intestines, from the lack of bile and pancreatic juice, and the food remains in the stomach because it can't get any further down—it has no room to go to. All these pepsins you have been using have been useless. There is nothing wrong with the kidneys: this sugar and indican are only manifestations of something else wrong back of them."

Well, this man wanted me to treat him. I had shown some interest in his case and made these tests right before his eyes, and he believed what I said was true.

There were only two things to be done—stop introducing foods that will make excess of poison, and clean out and clean up.

I put him on a modified Allen treatment for diabetes (still accepting the glycosuria as a symptom), which means, no food. (See page 76, 207 and 254, A. J. C. M.) I allowed him to eat sauerkraut, cabbage, tomatoes, and a little light bread, and kept him on this only long enough until the sugar disappeared from the urine, which occurred in two days. I had him to take 3 drams of sodium bicarbonate per day, and 2 drams of sodium phosphate per day, and prescribed the following mixture: Specific medicine chionanthus, 2 ounces; specific medicine echinacea, 1 ounce; specific medicine peppermint, 1 ounce. Directions: 1-2 teaspoonful every four hours, with plenty of water.

In one week, the man's headache was nearly gone; the urine was alkaline and free from sugar; the saliva was neutral; bowels were acting. Very little, if any, weakness was felt from being on short rations. I am now going to allow him a little fats and sugar, and two hours after eating give him bilein and pancreatin, enough to get intestinal digestion.

Understand, I do not think that I shall cure this man. But I do expect to lengthen his life and afford him considerable relief, so

that he can work in comparative comfort while he lives. I told him as much, and he does not look for a cure; still, he knows fully that I have done an honest piece of work.

No wonder to me that the world gets full of doubt as to the value of medicines and of the men who prescribe them. This man had proof that the half-dozen doctors he has been to in the past did not do their duty, either from wilful neglect and laziness or from sheer ignorance. And he is only one case in countless thousands.

Who will be the next man at the bat?

T. H. STANDLEE.

Edgewood, Tex.

A DAY ON THE BOSPORUS

It was dawn of a perfectly beautiful day when we entered the Bosphorus from the Black Sea. This scene, always beautiful, was exceptionally so this October morn. Having been there before, this was a delightful return visit. Roberts College, that worthy American institution, Miss Patrick's American Missionary School for girls, the Golden Horn, Constantinople, and St. Sophia were visited.

Having always been an admirer of Florence Nightingale, I betook myself to Scutari, across the Bosphorus from Constantinople, where still stands the old barracks hospital where her great labor was performed. Here are the old barracks that had been used for the Turkish soldiers, and which still are used for them. It is in appearance much as it was in '55, during the Crimean war, when shiploads of sick and wounded were sent here from the Crimea for Florence Nightingale and her coworkers to nurse, and save if they could.

Nearby on the bank of the Bosphorus, running water looking toward Mecca, was the English cemetery, where the dead were buried in lots of from ten to fifty, all who had died during the past twenty-four hours. They were buried in one common grave, unmarked, save in the instances of surgeons, clergymen, and nurses. Some of each profession were there. In one instance, two medical men were buried together, having died the same night.

Just over the wall were the Bulgarian prisons, and a cholera epidemic ravaged among them. The cemetery is beautifully kept by Major Lyn, a veteran of the Crimean war, who was nursed by Florence Nightingale. One particularly neat and well-kept grave was that of the United States Consul, who had

served for fifteen years at Constantinople. He was born at Rochester, Minnesota.

E. S. McKee.

Cincinnati, Ohio.

PHYSICIAN AND DENTIST

Kindly define the difference between physician and dentist. I am hopeful of learning just how much of a dentist's work the law permits a physician to do, and how much medical work a dentist is allowed to do within the law.

Would a physician thoroughly trained as a mechanical dentist—that is, having pursued such training that will fit him to do the mechanical work—be allowed to fill teeth, fit crowns, bridgework, and the like, without having been graduated from a dental college or having passed the state board's examination?

W. L. SELLERS.

Ringtree, S. C.

[Dr. Chas. G. Wright, M. D., D. D. S., a dentist practicing in Chicago, to whom the foregoing interrogatory letter was submitted, kindly favored us with the following reply:

"If anyone desires to practice dentistry anywhere in the United States, it is necessary for him to write to the secretary of the respective State Board of Dental Examiners of the state he has in mind as to the requirements which the state in question demands of a person wishing to engage in dental practice in that commonwealth.

"In a general way, any person is regarded as practicing dentistry or dental surgery, within the meaning of the law, who treats or professes to treat any of the diseases or lesions of the human teeth or jaws, extract teeth or prepare and fill cavities in teeth, correct malposed teeth or supply artificial teeth as substitutes for natural ones. Most of the state dental laws have a provision that nothing in the act is to be construed as preventing regularly licensed physicians from extracting teeth or treating stomatitis, and that registered dentists are permitted to administer general anesthetics when necessary in their practice.

"In the advance that has recently been made in dentistry, it often is found necessary to have radiograms taken of the teeth and jaws, and examinations made of the various fluids of the body, in making a diagnosis, and etiquette suggests that when systemic treatment is called for a medical practitioner be

consulted as to the treatment to be inaugurated."—Ed.]

THE AMERICAN TROPICS

I have read with unusual interest Doctor Hollman's articles on the Mosquito Country and the opportunities it offers. However, while the Doctor presents a fair and interesting description of that wonderful region, there are various other features that should be considered seriously by everyone contemplating exchanging his residence in the United States, with all the luxuries, conveniences, and opportunities that the best modern civilization offers, for the primitive existence in the tropics.

It is true, of course, that there is a peculiar fascination about the American tropics. A land of unusual natural beauty, the soul-stirring romance and tragedy of the days of the conquest, gold-laden galleons sailing the Spanish main, pirate-ships and buccaneers, tropical isles, sapphire seas, and spice-laden breezes have filled the picture that our vivid fancy painted as we read the stirring chronicles of those bold old days.

Have you ever felt the tropics calling, calling 'neath moonlight,
When nectar-scented, drowsy-sweet, the vagrant
land-breeze blows
And the stars seem glittering jewels in the sable
dome above you,
While the rising sun, at dawning, tints the eastern
sky with rose?

It is said that an American who has lived eighteen months in the tropics is doomed to spend the remainder of his days there, always longing for the north, but unable to break the enchanting spell that the tropics throw around him. And, in a general way, this may be true. There seem to be no halflikes or dislikes, you either are charmed by the tropics or you hate everything that smells of garlic or sounds like Spanish.

I do not want to be classed as a pessimist, for, I like the tropics and their peoples; but, there is another side of this life, and a few suggestions anent certain conditions not clearly outlined in the picture painted by our good friend may be helpful to those contemplating choosing the tropics as a place of residence—one may not say "home."

You who read in your morning's paper the news of the world, as you sip your fragrant coffee with real cream and eat hot muffins with creamery-butter, must make up your mind to forego these comforts, and the memory of them will ever haunt your dreams if you go to those tropical countries to live.

No butter, but little milk—and that boiled and more often scorched and salted—will grace your table. Coffee you will have, and you may learn to like it, even if it is only a fluid extract of the berry that will "float a pow-point" or "put a crimp in your hair."

There are to be found there practically no cook-stoves or ovens, so that, naturally, the whole dietary scheme is unique, not alone as to the articles of food, but in the manner of preparation.

Memory still paints for me a vivid picture of a certain Thanksgiving-Day dinner that the good wife had patriotically arranged for some of our isolated American friends in one of the Spanish-American countries. A tough native turkey was procured as the *pièce de résistance*—although all tropics-bred fowl served on the table appear to have been fed on the leaves of the castilloa elastica and religiously retained the rubber in their system. A sort of mestizo pumpkin, packed some leagues into town on mule-back, supplied the material for the pie customary to the Day. Our cook, with characteristic Latin assurance, claimed that he could make elegant pumpkin-pies, for he once had cooked for an American army-officer; when, however, the pie appeared upon the table, Shades of Puritan Mothers! there were two crusts, with chunks of sweetened boiled pumpkins between. However, each guest heroically did swallow one bite of the mess.

The food and cooking are not the only problems that have to be overcome or swallowed. There is the rain, rain, rain, and then the mud. Then, in the morning, one's clothing is so clammy and so smelly—even though you follow the "strange" foreign custom of taking a daily bath—and green with mildew if not worn every day, besides one's having to acquire the habit of tunking them before donning them, to jar out the scorpions, and centipedes and other visitors.

Furthermore, the tropics are the "home of the wailing donkey and the all-abounding flea." It is wonderful how long and how persistently a flea can crawl when it is under your clothing or in your bed and can not jump. Writing about beds in the tropics, the less said about them, the better. Day by day, so many times a day (except in the dry season), you have to lug your bedding out into the sun and rush it in again between showers, else it becomes too musty even for an "immune." Then, though the days are warm or even hot, you will need blankets at

night, and many times people go to bed early in the evening because of the chill, penetrating moisture in the air, and you are so "thin-blooded." It is a fact that the continuous high temperature of the tropics in conjunction with the humidity wears out those not to the manor born, it "gets on your nerves," and you long for a change to the crisp, dry, invigorating autumn days, long even to see the snow and the ice and to breathe the frosty air of the wintry North.

A person planning to go to the tropics must be prepared to forego schools, society, church, a comfortable home—I was about to add, and friends; but, then, one surely knows some loyal souls who will write to you, now and then. So, you will look forward to the "steamer-days," and the tears will come and your heart will ache if the hoped-for letters do not arrive. I feel very sure that Doctor Hollman's mail deluge was a Godsend and that as soon as he possibly can he will deliver up to the correo the necessary *oro* to get the remaining letters out of hock.

In making up your mind, you must remember that the language, the customs, the laws, the people, all and everything are different. In those Spanish-American countries, there is no law sustaining you in self-defense or in defense of your home. If a robber (and there are aplenty of them!) enters your house, you must submit or run away. If you should happen to kill or injure a highway-robber or burglar in the act, unless you can prove that it was accidental, you are liable to a sentence of thirteen years, eight months and twenty-one days in prison—and heaven pity those who must languish in one of those carcels, relics of medieval times!

While the tropics are rich in natural resources, a relatively large amount of capital is required to develop them, and I would warn Americans not to go to those regions without being assured of ample means for getting back to "God's own country." The tropics sorely need missionaries of Doctor Hollman's type—cleancut men of high ideals and moral courage. The moral status of many tropical countries is not as high as it is in North America, and there is no public sentiment to support the spineless. Many a young American, filled with dreams of conquest, has fallen quickly after setting forth among these natives; for, the American habit of "doing things" appears to apply also to evil as well as good, when he once gets started that way. Drink is not conducive to efficiency or longevity in the tropics; and

drunkenness is not the only vice that flaunts itself there.

To the reader, I will say, unequivocally, if you possibly can, make a voyage to the tropics; the more extended, the better. You will find it one of the most interesting and delightful trips imaginable. Embark on one of the liners that touch at Central American ports. Upon landing, go up into the magnificent plateau region of Guatemala, Honduras or Costa Rica. You will find a strange, beautiful country, far more foreign than Europe, and a people polite and interesting. It is a bit of old Spain in tropical America.

But, take my advice, before you decide to make your home in any of those sunkist regions, wait until the novelty of this new—yet, old—region has worn off ere you burn your bridges; and, above all, remember that those lands are not an ideal place to raise a family in, if you want your children to be North Americans, like yourself. The health-risk is not as great as most North Americans imagine, at least not, if you take good care of yourself; still, the risk is much greater than in the United States. The wonderful strides that tropical medicine has made in the last twenty years has limited the efficiency of that "grim destroyer," fever, that hitherto has so jealously guarded one of the richest regions of the world against the invasion and conquest of the civilizing white man.

I have touched upon some of the most serious drawbacks of the tropics, as during an extended sojourn in Spanish-American countries they have impressed me. Yet, with all the heat and rain and discomforts and squalor, the tropics still call.

Then, go away, if you have to go,
Then, go away, if you will!
Again to return you always will yearn
While the lamp is burning still!
You've drunk the Chagres water
And the mango have eaten free,
And, strange tho' it seems, 'twill haunt your
dreams,
This land of the coconut tree.

Chicago, Ill.

N. S. MAYO.

[Well! Now you have the other side. Since Doctor Mayo has lived in the tropics, he knows the conditions to be found there far better than does the editor. On the other hand, Doctor Hollman has spent thirty years of his life south of the Rio Grande and knows every turn of the road leading toward success or failure in that beautiful, bizarre, rich, and undeveloped land.

In our own opinion, there are men who are peculiarly adapted to an adventurous pioneer

existence in countries like Honduras. Such men will be happy far from the "comforts of civilization." But, for the majority, perhaps, these comforts have become necessities. The only way to tell surely to which class you belong is, to investigate for yourself. Do not stake your all on the experiment.

Our advice is, to visit Honduras—and then come back home and think it over. If two or three or more of our readers care to go down and see Doctor Hollman, it would be pleasant if they could arrange to go together, and we herewith offer our services to put such a group of men in touch with one another.

Doctor Hollman is now in the United States. He called on us only a few days ago. The impression we got was that of a clean-cut man of unusual ability, who is anxious to be of service to others and to develop the wonderful land in which he lives. Of course, we have no interest (except that of friendship) in his proposed colony.—Ed.]

A SIMPLE REMEDY FOR LEG ULCER

It doesn't seem possible that one or two weeks of rest, and the daily morning application of gauze soaked with pure glycerin, held in place by an elastic bandage, would cure ulcer of the leg. But it does. Try it and be convinced. The action is really marvelous.

O. F. WELCH.

Westport, Ind.

THE DIRECT OR INDIRECT CAUSES OF PELLAGRA

After considerable experience with pellagra, in my opinion we are absolutely in the dark in regard to its etiology, and I do not believe that any of the present-day theories can stand on their own merits.

My personal idea is, that the disease is due to an organism which exists somewhere in the gastrointestinal tract, causing putrefaction and fermentation of food, probably the fats and carbohydrates, resulting in a condition of extreme acidosis. To my mind lues plays a very important part, and I think the two conditions are closely allied. I am taking into consideration possible mistakes in diagnosis.

I had a case of pellagra in a married woman who traveled extensively, wined and dined at the best hotels in the country; who gave a luetic history and showed a xx Wassermann; she died promptly. Regulation of diet, no matter how well the latter be selected, will not cure all cases of pellagra, and I do not believe

that improper diet will cause pellagra in selected cases.

Negroes are more prone to the disease than whites, but the mortality among them is slight as compared with that of the whites who have contracted pellagra.

I have positively cured a large percentage of my cases with salicylate of mercury given once a week and pushed to the point of tolerance. Martin of Hot Springs is giving salvarsan with a great deal of success. Sodium cacodylate is useful if given in large doses, 15 to 20 grains every other day for four treatments, this course to be repeated after ten days' rest. Very often I combine the two drugs, salicylate of mercury and cacodylate of sodium, giving the injection of mercury one day and following it with the cacodylate the next.

C. M. BECK.

Memphis, Tenn.

[Mercury and arsenic have both been found very serviceable in the treatment of pellagra, the arsenic in the form of salvarsan as well as of the cacodylate of sodium. According to our understanding, results tend to show, however, that smaller doses than those employed by Doctor Beck are effective. We are anxious to receive light on this subject. In the administration of mercury salicylate or of sodium cacodylate, the addition of novocain will be found of advantage in that it diminishes the pain of injection. In the general treatment of pellagra the value of intestinal antiseptics must not be overlooked, and we may remind you of the very satisfactory reports of Doctor Bowling published in CLINICAL MEDICINE concerning his use of intestinal antiseptics. Calcium sulphide is also unquestionably of great value. We greatly appreciate Dr. Beck's paper.—Ed.]

Pregnancy-toxemia forbids the use of chloroform, calomel, and mercurial antiseptics.—Williamson, *American Medicine*.

Chionanthus, given with chelidonium, bryonia, gelsemium, and veratrum, we have never known to fail to effect a permanent cure of gallstone attacks.—*Medical Summary*,

Hering found that cats and dogs may die at the beginning of chloroform-narcosis, and the more excited they are, the more sudden the death may be.—*Medical Standard*.

In the diseases of children, if fever arises, aconitine will serve better to control than any other drug. It is a safe agent, properly employed.—Servoss, *Medical Summary*.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

(Continued from October issue, page 881)

As I have stated before, the struggle of the ages has been the emancipation of truth from authority. No thoughtful physician can fail to see the immense advantage of maintaining a liberal mind in the pursuit of his calling. It is of signal importance that the doctor not alone should welcome every advancement in medicine, but he should at all times be willing to put the broadest construction upon opinions conflicting with his own.

Every physician having the interest of his profession and of humanity at heart should admit candidly the value of any method, theory or practice that may promote the common object of alleviating human misery, taking the generous view of things, without which the pursuit of learning is but a jaundiced, melancholy affair.

Fortunate it is for him who has learned the

charity and liberality that characterize all genuinely great or progressive men in every profession. His open heart and intellect are spared many a regret and, throughout his career, for him the sun of truth is shining everywhere.

If we find our pathways obscured by shadows, it is because we are walking away from the light, and not toward it. The sacred flame that glows upon the altar of truth illuminates and cheers only as we approach it.

If we wish to progress and influence humankind in the right direction, each of us should be modest in the presence of nature, fearless in the face of authority, unwearying in the pursuit of truth, and absolutely free to seek it in our own way.

Freedom's secret wilt thou know?
Counsel not with flesh and blood;
Loiter not for cloak or food;
Right thou feelest, rush to do.

The Theory of Drug-Therapy

THE theory of the treatment of disease-conditions with drugs rests upon (1) the nature of the demands which disease causes, (2) the evidence that drugs possess that which is demanded, and can produce it at call, and (3) the proof that whatever aid is given can be safely withdrawn when it has performed its service, in other words, that its temporary employment may impart a lasting benefit.

Place.—The first demand for the use of drugs, made by disease concerns itself with the place, as to whether it is to be local or general. A sore throat or an inflamed larynx may be treated by local medication, whatever drug we use being aimed at the disease directly. But, when the affection is one of a deep-seated organ (when this is, for instance, an unstable nerve-center or a sluggish liver), then the remedy must be introduced into the circulation, through which it is distributed to every part of the

body, appearing more or less freely in this or that part, according to the vascular ramifications, passing indifferently those cells that do not demand its aid, and eventually reaching its intended goal by the working of the law of selective cell action; so that, in fact, the effect is as truly localized, after it is absorbed, as it would be by direct local application.

Time.—The second demand of the disease is that of time: whether the disease is acute and temporary, or chronic and indefinitely prolonged. The acute disorder, having a more or less determined course of its own, is characterized by a turning-point, after which the disease proper has come to an end and the practitioner has to deal only with its after-effects. But as at any moment during the progress of the disease excessive strain may result to the organism and thus endanger life, the chief therapeutic indication is, to gain time, prolonging our efforts until the natural

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term of the disease is reached, so as to pass the critical point in safety.

This is to be done, principally, by means of stimulants; that is, agents calculated to liberate reserve energy at the proper time and in the proper place. Stimulant treatment, however, is to be administered with nice judgment, bearing in mind that stimulants do not create energy, but simply make available energy that otherwise would not be released. They should, therefore, be withheld as soon as the critical point has been passed, since their further action would be, to drain the reserve.

In chronic disorders, the rule for the employment of stimulant treatment is different, its advantage becoming more and more questionable as the disease lengthens its course beyond certain limits. Nevertheless, there no doubt are some chronic patients who would be the better for the habitual use of small doses of stimulants, properly regulated. In these cases, however, the purpose is not, to increase resistance, but to improve digestion, the enhanced assimilation more than repaying the slight loss of energy occasioned by the stimulant itself. Therefore, if ever the habitual use of stimulants is advisable, it will always be in relation to food; but they should never be taken in the intervals between meals, in an attempt to arouse dormant powers.

When the disease consists simply in a disturbed balance, due to the withdrawal of some factor that belongs to health, and which has not the effect of a direct attack upon the vital powers (e. g., myxedema, resulting from perverted activity of the thyroid gland), there is, of course, no demand for stimulation.

Mode.—The third demand of disease is that of mode, in which the question is, How may drugs be fitted to meet the exigencies of the occasion? Thus, in fevers, for example, that are due to the entry of a new factor into the organism, how may the exhaustion which they produce be best combated? Sheer stimulant treatment manifestly ignores the possibility that the new invading element itself may be open to attack.

It is here that the value of antiseptics becomes apparent, by means of which we make war on the microbe of infection. If these do not suffice, there is a second mode of procedure, that of neutralizing, with antitoxin, the toxin through which the germ inflicts its injury, and of increasing the body's resistance by means of vaccines. And, lastly, we may

treat the symptoms, the secondary causes, opposing a parched skin with a diaphoretic, a fever with a febrifuge, constipation with a purgative, renal insufficiency with a diuretic: and so on; availing ourselves of drugs which, influencing the organs in this way or that, are adapted to restore the functional balance of the latter.

But there are also bodily states in which, while the whole system appears to be lacking in vitality, no particular organ or function seems to be affected. In such cases, we give medicines whose stimulative effects fall upon the whole rather than upon any part. These are called tonics. In those cases where the morbid state of the entire body is in the nature of a perversion rather than a lack of tone, we have a class of drugs whose effect is, to change the metabolic processes of the organism. These drugs are known as alteratives.

Physiological Balance.—In health, the parts of the human organism are so related to each other, so poised and interactive that they constitute a perfectly coordinated balanced whole. In the large sense, of course, it is impossible to affect any part of this organized body without affecting the whole, or reversely. Practically, however, disturbances do occur in which the influence upon the whole or upon the part, as the case may be, predominates to an extent that clinically classes them as either general or local diseases.

Nevertheless, we rarely meet either class of disease even in its clinical singleness, each usually being accompanied by some manifestations of the other, so that in the majority of cases it is necessary to combine local with general treatment. Local remedies often have no effect upon local affections until joined with a systemic remedy; so, also, general disorders frequently refuse to respond to purely general treatment, yielding only when some local affection has been treated and removed.

Wherever symptoms appear, however, whether general or local in character, they are evidence that the system has dropped from health to disease and that the physiological equilibrium is disturbed. As long as the term "health" is applicable to the body's condition, this balance is intact.

Pathological Balance.—There is another kind of equilibrium of the organism, and this may be designated as the pathological balance; that is to say, the ability of the organism as a whole to adapt itself to the

presence of a morbid influence and to assume a new balance; which, if it is not the balance of health, is the best that can be done under the circumstances. There are innumerable examples of such a condition, varying from the slightest ailments to the lowest levels of invalidism; and these call for every cautious procedure in treatment, since it often is difficult, if not impossible, to measure the degree of instability of the part. Moreover, there usually is present some symptom which when appearing in a healthy body would at once be recognized as a morbid departure to be actively attacked, but which, remaining here as a symptom of long standing, must be regarded rather as a factor in the pathological balance and to be left severely alone.

The best example of the body's power of self-adjustment doubtlessly is furnished by the action of the circulatory system, as manifested in three special forms; namely: (1) anastomosis, (2) relation between blood pressure and pulse, and (3) compensating hypertrophy. The following ideas are elaborated more fully by Sainsbury in his book on "*Principia Therapeutica*."

Anastomosis.—The vascular tree furnishes a system of canalization that provides for more than the ordinary needs of the body, the anastomotic branches forming a potential circulatory path, which, remaining latent in ordinary conditions, is pressed into use when the chief channels of current are obstructed. The disturbance in a given capillary varies in inverse ratio to the activity of the anastomotic circulation—a fact which lends to the organism a reserve power in this direction that is almost inexhaustible. Nevertheless, each demand, slight or great, that is made upon this reserve, means a proportional weakening of it, thus placing the body at that much disadvantage.

Relation Between Blood Pressure and Pulse.

—According to Foster, the rate of the heart-beat is in inverse ratio to the arterial pressure; and the significance of this law lies in the fact that through its operation there is maintained a steady rate of flow through all the vessels. For, as blood pressure rises in the arteries, it must be followed by a quicker passage of blood into the capillaries; so that, to store the balance, a decreased rate of pulsation becomes necessary. This maintenance of an even current means a steady expenditure of force throughout the body, and this tends to stability.

Compensatory Hypertrophy.—Every obstruction in a hollow muscle is answered by a hypertrophy of the muscle wherever there

is good metabolism. Indeed, this law may be extended to include all muscular tissue, throughout the body; such issue being seen to hypertrophy at every call for increased activity. To be sure, there is a limit to this overgrowth; and the hypertrophied muscle, having already expended some of its store of energy, is not in the same position of advantage as a normal one. In the case of the cardiac muscle, it must be admitted that the most highly compensated heart throbs at a lower functional level than does the normal organ; and it is imperative that the physician bear in mind that this mechanism of self-adjustment, wonderful as it is, has its limits, beyond which it is fatal to stray. Yet, this does not invalidate the incontrovertible proof here furnished of the powers of adjustment possessed by the tissues, which is constantly endeavoring to preserve the body's balance against disease-disturbance.

This compensatory power is possessed and exercised also in other systems, whose functions, excretory and secretory, are part of the complex body-chemistry. The vicarious part played by the skin, the lungs, the intestines, and by other organs in disability of the kidneys is a familiar example of this complementary relationship.

Whenever the balance of health is disturbed, the organism endeavors to return to its habitual normal state. Moreover, no matter how great the diversion from the normal, the organs and tissues never lose utterly their characteristic activities—these are inherent and not to be destroyed.

In administering remedies, we do not put extra virtues into the body; we arouse, or attempt to arouse, that which already is there, although sleeping or injured. This is the reaction which, as I have said in my introduction, is characteristic of modern therapeutics. We can not create, we only can condition the manifestations of activity.

Therefore, we may assume as one of the first essentials of applied therapeutics that in the administration of any remedy we should at least be certain that it will do no harm. We may be able to modify the internal workings of the various organs, increasing or decreasing their action, as well as influence their interaction upon each other—that we can do, no more; and we cannot always do even this.

It has, for example, been found by experiment, that the heart would better be left to itself to meet an obstruction by undergoing hypertrophy, or, that the leukocytes may be trusted to deal with a microbic inva-

sion without our aid. It was this tendency of the body to resume, after disease or injury, its balance, that the ancients named the active remedial principle within the organism, the *vis medicatrix naturæ*—a term that well describes those reserve powers with which the tissues respond in cases of emergency. But, these powers are in excess of the ordinary vital tone, to be drawn upon only in times of great stress; every demand upon them being necessarily, met by a greater or less impairment of their vitality.

It may be remarked that this same *vis medicatrix naturæ* has formed a convenient foundation upon which to erect numerous so-called "systems of healing," which, without it, never could have a shadow of excuse for being. The healer claims the credit for the cure, and he claims it all the more confidently because of never even having heard of a *vis medicatrix naturæ*. The fact is, that this recuperative principle often is so powerful that a healer's efforts, fortunately have little effect upon the organism, favorable or otherwise.

The reputable physician openly avails himself to every possible extent of this natural tendency toward restoration. However, there are times when the working of this self-adjusting mechanism seems to have a contrary effect, even threatening life. The reaction of inflammation in laryngeal diseases, where the swelling of infiltration, which might be of no significance in other parts, assumes a critical aspect, multiplying the dangers instead of diminishing them; the dangerous increase of intramuscular tension, due to the firm fibrous casing of the eyeball—itsself so essential to the ocular functions—maintaining, as it does, that organ's definite globular form, are familiar examples of this fact. It will be found that this unfavorable response on the part of an organ to body repair is in direct ratio to its degree of specialization, being, in fact, a clash between the specialized functions of the organ and its subservience to the general organism and when such specialization occurs within the sphere of a vital function there is danger to life.

Consequently, we are obliged to examine each case of disease carefully, in order to determine whether the natural trend is healthward (as it is in the majority of cases), or whether the reverse obtains, with conditions of such a nature that they must be interfered with at all cost; always the *vis medicatrix naturæ* is in proportion to the degree of discrepancy between specialization and general process, and whenever this attains a certain

height the balance passes beyond natural recall and demands the intervention of therapeutics.

Another application of the negative-side treatment consists in the observance of a principle which endeavors to keep at a distance all disturbing elements, so that the recuperative powers may act unhampered; in other words, the principle of functional rest. This may be brought about by mechanical means, by chemical action or by application of our knowledge of physiology, which enables us to give rest to one part at the expense of another.

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Thus, the ends may be attained, either actively or passively; also, either directly and from the morbid part itself, as when by tying an artery, we destroy an aneurysm; or, indirectly, as in the employment of a purge and a diaphoretic in acute inflammation of the kidneys. Whatever the means, the intention is, to induce a condition of rest at the seat of disease, a "healthening" of the local vital energy and the storage of force and material out of which to rebuild both tissue and potential.

Following are a few practical examples, familiar to everyone, of the application of this principle:

The darkened room in all diseases of the eye.

Rest in bed in heart troubles.

The employment of milk in ulcerated intestines and in localized peritonitis.

The isolation of neurotic patients.

The use of splints in cases of broken bone.

The fixation of the chest in acute pleurisy.

The removal of all disturbing psychic elements in tetanus and other conditions.

It should, however, be borne in mind that the application of this principle of rest is capable of being overdone, since the ~~laws~~ *laws* of health demand that the body shall have breaks of activity as well as of passivity, and that too great a preponderance of rest will result in an abolishment of the power of function, instead of its restoration.

Where the function is an intermittent one, as in the process of alimentation, we may compromise the matter by extending the intervals between its activity, as, for example, the intervals between meals. Or, we may decrease the intervals and furnish less work for the function during the time of its activity; that is to say, in the case of digestion, for instance, we may give frequent small and easily digested meals.

[To be continued.]

Among the Books

KOLMER: "INFECTION AND IMMUNITY"

A Practical Textbook of Infection, Immunity, and Specific Therapy, with Special Reference to Immunologic Technic. By John A. Kolmer, M. D., Dr. Ph., Philadelphia: W. B. Saunders Company. 1915. Price, cloth, \$6.00, net.

"The day is past when the physician and surgeon can relegate the things of immunity entirely to the laboratory. Diagnostic methods and reactions and the field of specific therapy—vaccine, serum, and chemo—are subjects of such practical importance that it is obvious that the physician and the student of medicine can no longer be merely mildly interested onlookers. The physician who injects salvarsan, a serum or a vaccine, or who uses a diagnostic reaction, must be prepared to explain to his patient the nature of the therapy he employs and the significance of the reaction. This he can do only by equipping himself with the knowledge of the fundamental factors of immunity, or he will be forced into the position of a passive transmitter of ideas entirely beyond his own knowledge."

This paragraph from the author's preface presents a complete justification of the volume before us the purpose of which is, not only to present to practitioners and students of medicine a concise account of our present knowledge concerning the many problems of infection and immunity, but also to furnish all those engaged in laboratory work a guide to the various immunologic methods, as well as to outline for students of medicine and those interested in these branches a laboratory-course in experimental infection and immunity.

The literature on the subjects covered by the title of the book has assumed such immense proportions that it is not a cause for wonder that this treatise has attained to the unusual size of 867 pages of text. Rather, the astonishing part is that the author should have succeeded in condensing the relevant information in a single volume, instead of filling two or more.

Considering the presentday views concerning the bacterial etiology as well as treatment of a great variety of diseases, it is plain that

the way in which infections are accomplished and the manner in which they are resisted by the organism must be studied carefully. For the physician who desires to avail himself of the advantages that are presented by the etiological treatment of bacterial diseases, it is not sufficient to know that a certain disease is caused by this or that microbe, but he must know how these microorganisms affect the organism, how the organism reacts to a given invasion, how the infectious disease may be recognized, and how it may be combated by the very means that have given rise to it. All these problems are discussed and explained in an unusually acceptable manner in Doctor Kolmer's treatise.

Constant consultation of this work for more than a year past has but increased the Reviewer's admiration and has aided him in arriving at a better understanding of the problems under consideration. It is true that, in the last instance, these problems cannot be presented as definitely determined facts. The student will realize and must keep in mind that the entire science of immunology still is based upon theory; but, if the theory enables us to arrive at a satisfactory explanation and to treat infectious diseases the better, then it has accomplished its purpose.

Doctor Kolmer's work explains to the physician the causes of infectious diseases, it aids him in recognizing and in treating them. Moreover, it affords instruction in laboratory-methods anent the infectious diseases, and consequently, is of service to physicians, to laboratory-technicians, and to students of immunology alike.

"THE NATIONAL FORMULARY"

The National Formulary, Fourth Edition. By authority of the American Pharmaceutical Association. Official from September 1, 1916. Printers and binders, The J. B. Lippincott Company, Philadelphia, 1916.

Despite its long and honorable history and useful career—having had its inception away back in 1856 and its full birth in the year 1888—the National Formulary, it is feared, is not as generally familiar to the members of the medical profession as it should be—to many of them it being but a name and

thought of as a mere collection of formulas for skin-lotions, shoe-blackening, and imitation proprietaries of interest only to druggists.

As a matter of fact, the "N. F." is as much a pharmacopeia as is the "U. S. P." itself; and, while a large percentage of CLINICAL MEDICINE subscribers are self-dispensers of ready-to-use active principles and other drugs and chemicals, nevertheless, but few practitioners can entirely forego prescribing galenical preparations, and, for this latter purpose, the doctor must know what is official at the time being and obtainable at either the pharmacy or the drug-jobbers.

Space limitation forbids entering into details; suffice to say, categorically, that now, more than ever, the National Formulary, albeit yclept a "formulary of unofficial preparations," is, in fact, a part of the official pharmacopeia. For, besides containing formulas for unusual galenicals prescribed by physicians here or there, it has become the repository of those preparations for one or other (often poor!) reason expunged from the "real" pharmacopeia. Furthermore, the National Formulary at present is as absolutely legal standard as is the United States Pharmacopeia itself. Which suggests a personal reflection—first saying that "Extra-Pharmacopeia" would seem to be the more appropriate title.

The writer of these comments was, for many years, actively connected with retail pharmacy and has been associated with pharmaceutical and medical journalism, and he here confesses that he has viewed with much misgivings the latterday evolution of the United States Pharmacopeia—the growing domination of the teaching theorists and the laboratory-scientists over the practicing pharmacists having wrought great detriment, in the opinion of many, to pharmacy as a gainful profession. The idealist has strangled the practicalist.

The office of a pharmacopeia (*pharmakon*—remedy; *poieein*—to prepare) is, to supply a standard to the apothecary for galenicals commonly prescribed by the physicians of his community. That, for the United States, means our country over. What object, then, is subserved in having one small, "official" collection and a second, big, "unofficial" one, but both legally binding?

The present revision of the Formulary has 354 pages devoted to simples and galenicals, all having precisely the same legal and medical status as has the text of the Pharmacopeia. Surely, common sense would seem to suggest putting them all alphabetically

into one volume. The man behind the prescription-counter and he "behind" the prescription-tab will swear that there is altogether too much juggling done by the "professors," in the way of shifting from one "list" to the other, changing of the nomenclature, and expunging. No wonder busy practitioners are unfamiliar with these two authoritative books. As to the Formulary, numerous specially invented preparations will remain unused—as this writer has pointed out years ago in *The Western Druggist* and in converse—as long as the formulas are not accompanied by an explicit commentary regarding their nature and purpose and employment.

One cannot here consider the various features of this Formulary, except to say that, in its makeup, it now parallels the Pharmacopeia, alongside of which this book ought to have a place on every doctor's shelf. As for the formulas themselves, they have been worked out painstakingly by the best men in the profession and with the collaboration of the Council of Pharmacy and Chemistry, the United States Public Health Service, and of specialists.

The substitution of the term milliliter (mil, mls) for cubic centimeter (Cc.) already has been mentioned in these pages; in this only following the usage of the United States Bureau of Standards. A useful feature is the chapter on sterilization, which will serve as a practical guide to many a tyro. Another excellent idea is that sensible abbreviations of drug-names are presented for use by prescription writers.

The changes in titles and the additions and deletions of preparations are so numerous—unfortunately! one is inclined to exclaim—that this fact alone seems enough to impel every doctor to give this volume close attention. Thus, for instance, "fluidglycerates" constitute a newly added class; petrolata saponata are now called petroxolina, unguenta extensa are called mulla; and we now have salia effervescentia for the former name of pulveres effervescentes, pilulæ glycerylis nitratis for p. glonoini, elixir cinchonæ alkaloidorum for e. cinchonæ, and elixir terpini hydratis et diacetylmorphinæ for e. t. h. cum heroina.

MANN: "PRACTICAL PRESCRIBING"

Practical Prescribing and Treatment in the Diseases of Infants and Children. By D. M. MacDonald, M. D. London: Oxford Medical Publications. 1915. Price \$1.50.

The prescriptions offered in this little volume throughout adhere to the British Pharmacopeia. They are largely galenical. The general suggestions and directions for treatment and management of the patients are very acceptable.

CHILD: "INDIVIDUALITY"

Individuality in Organisms. By Charles Manning Child. Chicago: The University of Chicago Press. 1915. Price \$1.25.

In "Senescence and Rejuvenescence," a book published by the same author, and which was reviewed in these pages in October, 1915, he was concerned chiefly with the periodic change of the age-cycle in the organic individual as one aspect of the life-cycle.

The present book—"Individuality in Organisms"—deals primarily with the problem of the nature of the unity and order in the organism, the constancy of character and course of development, the maintenance of individuality in a changing environment, and the process of physiological isolation, disintegration, and integration, or individuation, in reproduction. The idea of individuality is not limited to that of the self-conscious, reasoning entity, but is treated in its physical or physiological meaning, down to the cell, which biologic entity, because of its behavior, constitutes an individual, as much as does each human being.

As has been said in the review of the older book, the importance of biology, for an understanding of the complicated processes of life, is being realized in an increasing degree, and the present effort by Professor Child in many respects is complementary to his earlier work.

ABRAMS: "DIAGNOSIS AND TREATMENT"

New Concepts in Diagnosis and Treatment. Physico-Clinical Medicine. The Practical Application of the Electronic Theory in the Interpretation and Treatment of Disease. With an Appendix on New Scientific Facts. By Albert Abrams, A. M., LL. D., M. D. San Francisco: Philopolis Press. 1916. Price \$5.00.

Doctor Abrams is well known through his work on spondylotherapy, and his views concerning the causation, recognition, and treatment of disease—which, to say the least, are novel—have called forth the liveliest protests on the part of orthodox authorities. Fortunately, Doctor Abrams has the courage of his convictions, and his teachings too firmly

are supported by practical observations and clinical results than that they could be cast aside merely because they are new. We confess to having approached the perusal of this book with rather a sinking heart and to having found it hard reading; but, then, that is due only to our own insufficient acquaintance with the author's teachings in general. Nevertheless, we are impressed with the force of his arguments and with his methods of investigation as well as his system of treatment. Physicians who are acquainted with spondylotherapy surely will want this book. Others cannot do better than to study both, this work and the earlier one, entitled "Spondylotherapy."

LEWIS: "DISORDERS OF THE HEART BEAT"

Clinical Disorders of the Heart Beat: A Handbook for Practitioners and Students. By Thomas Lewis, M. D., D. Sc., F. R. C. P., Third Edition. New York: Paul B. Hoeber. 1916. Price \$2.00, net.

In contradistinction to other books on heart diseases, the author of this volume limits his discussion to certain symptoms that may manifest themselves in connection with the function of the heart and which are manifest in the physical examination. In the eight chapters of his book, he deals with sinus arrhythmia, heart-block, premature contractions, simple paroxysmal tachycardia, auricular flutter, auricular fibrillation, and alternation of the heart. In the discussion of his subjects, he has availed himself of the extensive and valuable acquirements of recent studies of the heart, and he presents these new facts and conclusions that are of chief service at the bedside, in a form in which they may prove of value to the general practitioner.

BROCKBANK: "HEART DISEASE"

The Diagnosis and Treatment of Heart Disease. Practical Points for Students and Practitioners. By E. M. Brockbank, M. D. New York: Paul B. Hoeber. 1916. Price \$1.25, net.

In this little volume, the author discusses the clinical recognition and diagnosis of various forms of heart affections. He gives instructions as to how to examine the heart, and what to look for. A short chapter on treatment is appended, in which a few remedies that influence the heart directly are discussed, while greater stress justly is laid upon rest and suitable diet.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 6252.—“Persistent Temperature. Morning Diarrhea.” P. H. P., Ohio, has a patient, a girl five years old, who has been sick three weeks. At first he thought she had typhoid fever, as for a few days she had a slight fever; but no bowel symptoms developed, although the fever remained. Her tongue is clean. The elevated temperature ranging between 100° and 101° F., persists. Still, the child does not seem very sick. No rales are discernible in the chest. The girl would get out of bed if she were permitted. “What,” asks our correspondent, “may be the matter with her, and what should we do in those cases where there is increased temperature following an attack of bronchitis, and so on? It occurs to me that iodized calcium would be helpful when a mild infection and temperature persists.”

Here is another question. A man, aged fifty-five, strong and of good habits, personal history negative so far as it relates to his present condition, is troubled with diarrhea. It seems that at about 5 o'clock in the morning he has a loose bowel movement. Why it occurs at this particular and unusual time I do not know. Of course, his bowels are too free at all times, but always they act at around 5:00 a. m. A number of physicians have treated him, but without success. I also have exhausted my skill. What is your opinion?

We regret that you did not send specimens of urine and a blood-smear from your little patient (case 1) with the persistently elevated temperature. As a rule, thorough elimination—by kidneys, skin, and intestine—and the administration of calcium sulphide, echinacoid, and quinine ferrocyanide as alternants, will remedy the condition, as described, in short order.

You do not give us a clear enough idea of the clinical conditions generally, so as to enable us to discuss the case more intelli-

gently. In all acute respiratory disorders, calx iodata may be administered with advantage; but, then, you do not state definitely that such condition existed—you merely say, “I decided that she had some bronchial trouble.” What about the tonsils? Is the child's appetite good and digestion satisfactory? Give us a little more light, doctor, and we probably shall be able to aid you more intelligently.

2. In all probability, we can make a definite diagnosis and outline effective treatment in the case of the man afflicted with the chronic diarrhea, if you will send a specimen of feces and urine (4 ounces from the 24-hour output, stating total quantity voided) to our pathologist, for examination.

One or two injections of emetine hydrochloride, followed by a course of berberine or hydrastine, and this by the prolonged use of the bulgarian bacillus, probably will meet the requirements. The wearing of a flannel belt will prove decidedly beneficial.

Discover just when and how this diarrhea started. Has the patient at any time used alcohol to any extent? What is his occupation? It might be well to examine the condition of the rectum. Ascertain the area of hepatic dulness. See, also, whether you can palpate the spleen.

QUERY 6253.—“Infantile Paralysis?” L. D., Washington, asks what diagnosis, other than that of temporary paralysis produced by the toxins of a severe tonsillitis, could be made in the following case.

“In a family of four children, the eldest, five years of age, had tonsillitis, from which recovery was complete and rapid, then the one of three years had an attack, and here also recovery was complete, except that marked prostration continued for a week. Next, on June 29, a very severe attack of tonsillitis developed in the 2-year-old child. On June

30, it was unable to stand on its left leg, the knee giving and bending in under the right leg (which remained unaffected). On July 1, the child was extremely excited, and very sensitive to noise, and opisthotonos set in. July 2, it was less excited, but would not permit either leg to be manipulated. July 3, it was much better and continued to improve steadily for the next three days, but was nervous. July 7, the child crept a little, but we discovered that, while the left leg seemed fairly good, the whole right leg was paralyzed. Since then, however, improvement has been steady, until now the child walks a little.

"The child did not have diphtheria. Also, none of the 15 or 20 playmates of these children were taken sick."

As you can readily understand, doctor, it is absolutely impossible for us to venture a definite diagnosis from the meagre facts presented. For one thing, you do not state the mode of the onset of the attack, nor the range of temperature, nor do you give any information whatever relative to the nature of the infecting microorganisms. For, such pronounced systemic disturbances as here portrayed could hardly be expected, save in the most severe forms of streptococcic angina. Has there or is there now albuminuria? You say positively that there was no diphtheria; consequently, we assume that throat-cultures were made and the presence of the Klebs-Loeffler bacillus definitely excluded.

There is little question in our mind that—in the case of the 2-year-old child, at least—there was some meningeal involvement, possibly pneumococcic; but it must not be forgotten that just such a clinical picture as here shown may present itself in the milder forms of acute anterior poliomyelitis. If you will give us further light, doctor, we shall be able to discuss the matter more intelligently.

Considering all the facts, we should hesitate to exclude this last-named disease.

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 QUERY 6254.—"Sugar Content of Bacillus Bulgaricus Bouillon." J. C., West Virginia, desires to be informed as to whether the culture-medium used for the above named preparation is that of Cohendy (that is, a mixture of milk-whey and cane-sugar), and, if so, whether it can safely be prescribed for diabetic patients.

Bacillus bulgaricus bouillon consists of a pure culture of the bacillus bulgaricus in a special bouillon containing whey, various salts, lactose, and dextrose. After this bouillon has been inoculated with the bacillus bulgaricus and properly incubated, each tube

contains a small amount of sugar—approximately between 8-100 and 6-100 of a Gram. Tests of several tubes have shown from 3-100 to 4-100 of a Gram of glucose, and a slightly smaller amount of lactose. We do not believe that this amount of sugar could prove deleterious to a diabetic patient.

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 QUERY 6255.—"Paralysis or Psychic Trauma?" J. T. F., Washington, presents a rather unusual and most interesting case, in the hope that we can offer a diagnosis. The patient has consulted many eminent specialists in New York City, Rochester, (Minn.), and elsewhere, but has not been benefited in any way. The man's father and mother are alive and well. Tuberculosis or other serious systemic taint is not a factor. Our correspondent's presentation follows in its essential parts.

"Man, aged 28 years, married. Weight, 165 pounds; height, 5 feet 10 inches. In good health. Received a blow in the region of the twelfth dorsal vertebra from a sledgehammer weighing 8 pounds, which fell on him as he was stooping, a distance of 40 feet. Subsequently walked a mile without assistance. The next day, he was paralyzed from the waist down, and had no control of bladder or bowels. The skin had been slightly bruised, but was unbroken, at the site of injury. More than 35 x-ray pictures, made at different times, disclosed no lesion of the bones. After massage, exercises, electricity, and the like, he has recovered so far that he can get around on crutches, by swinging the legs from his hips. Loss of all sensation from the lower third of the thigh down to his toes still continues.

"The man learned to drive the automobile, by having a brace, extending from the waist to toes, fastened around waist. Then, one day, while on a trip with his wife and another lady friend, they were precipitated into a river. He struck out to swim after one of the women and succeeded in rescuing her after they had been carried a half mile downstream, carrying her in his arms up the bank. He walked several feet, then fell down. The next day, he walked unaided a distance of 10 feet, and the day after he walked 100 yards. Since then, he has been slowly improving, so that now he walks quite naturally, entirely unaided. This swimming feat was performed about eleven months after the original injury was sustained.

"The patient weighed 105 pounds in December last (1915), while at present, his weight is

145 pounds. His appearance seemingly is normal, muscular development is normal, appetite is good, also his digestion, bowels are regular and under good control. He is somewhat nervous, sleeps fairly well, although not going to sleep readily; eyes seem to be normal, reacting to light and distance; skin is normal, without trophic disturbances, and is of good color. In his right arm, from shoulder to the tips of his fingers, he has a tingling sensation, and it feels as if asleep. The mobility of this arm is perfect, so also are the senses of touch, pain, temperature, and so on. Chest and abdomen seem perfectly normal. The spine is exquisitely tender from coccyx to base of skull, and the lightest touch on it causes pain; this painful area separates at the base of the skull and branches off laterally and upward. The rest of his body is entirely free from pain. The locomotive power of the legs is good, but there is absolutely no sensation, in both, from the lower third of the thigh to his toes. When standing with feet together and eyes closed, he sways sideways and backward, but does not fall. All reflexes apparently are normal, the knee-jerk possibly being slightly exaggerated.

"The patient has to get up four or five times in the night, to urinate, but voids only a little. He also urinates many times during the day; however, the 24-hour output is normal, while chemical tests reveal nothing pathological. If he neglects to urinate just as soon as desire comes, the sphincters will refuse to hold. His sexual power practically is extinct; yet, erections are normal, although there is little sensation. About three or four times a week, a rush of blood comes up his throat, when he spits out about a small cupful, regardless of circumstances—time of day, position, occupation. There is neither pain, soreness nor any induration in the costal arch. The lungs are good, and he does not cough. This blood obviously is from his stomach, for it is mixed with food and has the appearance of new venous hemorrhage.

"Sometimes, when carrying things, his fingers will relax suddenly and let go; however, he can immediately pick the article up and hold on to it. His memory is getting bad; occasionally he loses a whole day this way and cannot remember a thing he has done during that time. On bending backward, he experiences, in left groin, a sensation like that of the "funnybone" being struck; then the pain becomes severe in small of back. This subsides as soon as the upright position is resumed. He can bend forward and nearly touch the floor with his fingers, but will fall

forward before he can touch the floor. He feels little pain in thus bending forward.

"The patient has had various electrical and many other kinds of treatments. He now is having cold douching to the spine. Previously to this, he has had alternation of hot and cold to the spine. None of these seem to help his condition in the least."

The Query-Editor and his colleagues have very carefully considered the facts presented about this "paralytic who is not paralyzed." Somewhat similar cases have been reported in literature, and among them are several of so-called railroad-spine. There is, of course, nothing surprising in the fact that the patient in question walked home without assistance after the accident and that he was paralyzed the next day. Since the x-ray examination has shown that no bones were broken in the spinal column, symptoms of fracture (loss of function) could not then have been present. The paralysis was a pressure-paralysis, due to swelling or, more probably, to effusion in consequence of the concussion and several hours were required for this to form. The loss of all sensation, from the lower third of the thigh down to the toes, easily may have existed at first. But its persistence is contradicted by the ability of the patient to walk.

One paragraph of your letter requires a series of diagrams before a mere doctor can understand it. He must imagine a man wearing a brace extending from waist to toes. This was applied, presumably, in order to prevent the swinging of the man's legs from the hips while he walked on crutches; and it must be assumed that this brace was stiff, for nothing is said about its being jointed at the knees. The present writer imagines, however, that it must have been so jointed. If that is correct, how, in the name of all that is reasonable, could this poor paralyzed person strike out and swim after one of the two ladies who, with him, had been precipitated into the river. This hardly is conceivable, since we must assume that all of a sudden the paralysis yielded and that he was able to kick loose from the brace—like the individuals at a spiritualistic seance, who free themselves, in the dark, of all the cords and things with which they are tied.

Anyway, the point here is, that the man could swim. Then he carried a heavy load up the bank and walked several feet beyond. What next? All of a sudden he remembers that he is paralyzed—and he drops to the ground. But, the next day, the memory of that swim and the walking-feat arouses

his ambition: he walks, unaided, about ten feet. Still, the underlying anxiety-inhibition prevents; the mental impression of the paralysis is stronger than that of the swimming and walking. In consequence, further walking is inhibited. The same explanation may apply to his experience the following day, when he walked a hundred yards. After this, the mental impression of the actual walking accomplished became stronger day by day, and in the same degree it overpowered the anxiety-inhibition of the paralysis-idea. Consequently, in the same degree his ability of locomotion gradually was restored.

We take it that the "tingling sensation" in the right arm, of which the patient complains, is a remnant of the paralysis-idea. We note that motion, with sense of touch, of pain, also of temperature, are perfect; hence, we must believe that the tingling is a purely mental manifestation.

Now comes one great contradiction. "Motor power of legs good, but absolutely no sensation from the lower third of the thigh to his toes in either foot." That is an absolute impossibility. If there were no sensation in the feet and legs, there could be no motor power.

The slight hemoptysis appears to the present writer to be coincidental, moreover, the blood may just as well originate in nose or pharynx, being swallowed, then raised. This point hardly needs discussion.

The fact that this man can carry things, but that occasionally his fingers relax suddenly and drop the objects again is explained by the persistence of the paralysis-idea. It is a phase of anxiety-inhibition, which becomes active whenever the man happens to remember that he was paralyzed. Also, there is present, subconsciously, the question as to whether he is still paralyzed or not, and the unconsciously felt inability to overcome his fear of lasting injury. (This may not be perfectly clear, as often attempts to explain psychic processes are not.)

The sensation in the groin and the pain in the small of the back, or upon bending backward, also a pain on bending laterally, suggest a local injury in which one of the intervertebral cartilages may be dislocated and impinging upon the root of a nerve. One can readily imagine such a thing to happen by way of reaction to the blow such as the man experienced at first. The tendency was, of course, to straighten up suddenly from the stooping position. This straightening up possibly was jerky and may have thrown the different portions of the spinal column out

of alinement, thus permitting one or other of the cartilages to slip either forward or backward.

Naturally, it would be very difficult to determine this fact in the x-ray pictures. It does not seem to be an unreasonable explanation, though.

The diagnosis of this case is, that possibly there is present a degree of effusion that still persists although slowly growing less; then the impingement of a displaced cartilage. The major diagnosis is that of "psychic" trauma.

The treatment is local as well as mental, the latter consisting partly in reeducation and partly in suggestion (*not* hypnotic).

For the local treatment, it might be well to apply a series of small fly-blisters along the entire course of the spinal column, starting at the occiput. (A portion of the hair would have to be shaved off, of course.) We would advise this, because of the painful sensation along the spine, which bifurcates in the region of the occiput and passes to either side. Of course, the blisters must be treated in the ordinary manner.

Before the reeducation can begin, the patient must be shown the inconsistency of the history as remembered. You must explain to him what is meant by anxiety-inhibition, and also how the paralysis-idea can interfere periodically with his free motion. You must show him that the paralysis can no longer, possibly, have existed when he swam in the river and walked up the bank. He must know also that motion is incompatible with absence of sensation. Since he has motion, the consciousness of sensation may be dormant, but the sensation itself certainly is present.

You should, at the same time, explain to this man why and how a psychic trauma may arise. Tell him that this is not malingering and that there is no pretense in it. Prove to the man that he requires readjustment of his mental attitude in regard to the extent of injury and its consequences. Unless the patient learns to reason it out fully, it will be impossible to begin with his reeducation; but, we believe that he will recover the full command of his locomotor apparatus, unless that suggested displaced cartilage really is a factor.

We shall be pleased to hear of any further developments in this case, as it interests us greatly.

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 QUERY 6256.—"Dementia Præcox." W. T., California, asked us to venture a diagnosis

of the case of a young woman, and outline treatment; the patient's history being as follows: "At the age of about twelve years, she had a 'nervous chill,' following an attack of grip. She 'shook all over,' but got better after being warmed up. After that, she had blue and gloomy spells. She thought that she was going to die, imagined that she had swallowed glass, that something was wrong with her heart, or that all the streaks of light were Jesus coming with the angels to take her away. This was three years ago. She always is worse in the winter. Now she labors under the belief that she killed a certain man who was murdered when she was yet a young child, and when anyone dies, she thinks that in some mysterious way she was the cause of it. She is quieted by being assured that her belief is morbid. That word suits her. When she thinks all kinds of things and is told that they are 'morbid' imaginings, she seems not to worry so much.

"Then, also, she will ask the same question over and over again and tries to tangle her mother in every way possible. She talks to no one else on the subjects named. She goes to parties and is kept with other girls as much as possible for she does not seem to think of things while with them.

"She is, and has been, receiving a nerve tonic. Dancing and all kinds of outdoor sports have been advised, and that she be kept in the open air as much as possible. She was a very bright child until this trouble came on. Strangers would not know that there is anything the matter. She walks stooped and is pale, but is not very thin. She eats and sleeps better since taking the tonic. She always has been terribly constipated."

Our reply was as follows: Frankly, doctor, it is absolutely impossible for us to venture in this case a rational diagnosis, much less therapeutic suggestions, without having a much clearer idea of the woman's general physical condition. You must bear in mind, though, that this girl was one of the brightest members of the family until about her twelfth year. It is absolutely essential that you discover what happened at that particular time. Then, also, a very thorough examination of the pelvic viscera should be made. The whole train of psychic symptoms might disappear by performing clitoridectomy and dilating the vaginal and anal sphincters. The cervix uteri also should be subjected to an examination, and, if a pinhole os exists, it should receive attention.

Furthermore, you have not told us at what

age she first menstruated, nor anything about her habits. Look into this matter carefully.

Autotoxemia, necessarily the result of constipation, must be corrected, of course. You must bear in mind, however, that in these cases internal medication is absolutely useless unless the basal pathological condition is ascertained and, if possible, corrected. It is quite evident that, serious as the patient's mental condition is, it is not as yet to be regarded as irremediable. If you will give us further clinical facts, we shall be pleased to comment further. To this, we received the following reply, giving further information:

"Last winter the young woman went coasting and in some way struck the bottom of her spine. The girls brought her home, because it hurt her to walk. She complained of it hurting her for about six months. No other known accident occurred to her, except a fall, when she was about two years old, when she climbed up on a high chair on a porch and fell from it down 5 steps on to a brick walk, striking her forehead. There is a place in the middle of her forehead where the skin seems to have grown fast. It looks like a dimple.

With the exception of being constipated, the girl has been unusually well, aside of this nervous trouble. She would not go to sleep on account of her imaginings, and sometimes would sit up in bed and think she saw a hole in the wall. She was always afraid at night and wanted to be held tight. She menstruated in the beginning of her fourteenth year. The flow is scant and lasts about four days. There is no pain. She has not been irregular till lately. Now the periods are further apart, five weeks the last time, and five have passed this time and she is not sick yet. She is always worse just before her catamenia. When this trouble first came on, she would sleep all curled up and hold her hands turned in, in an awkward position. She does not do that any more.

"Her people try as much as possible to keep her from hearing about the death or injury of anyone, because she thinks that, in some way, she is responsible. Her mother asked her to crack walnuts with a hammer, and she would not do it, as she was afraid something might make her hit the mother with it. She continues to think that she has been associated with every murder she hears about. She thinks she might be the cause of her mother's death in some mysterious way, by some backward step of hers or by thinking things in different ways. When²off the subject of murder, she is like the rest of us; ¹on it,

she loses all and gets tangled. Once in a while she will say, 'I wish I could get sick and die. There is nothing in life for me when I cannot quit thinking of these terrible things. But, are they all morbid?' She is told, over and over again, that they are, and for the time she believes; then she becomes afraid again that her belief is real.

"The girl, now seventeen, weighs about 110 pounds and is in good physical condition. Her complexion is sallow; has no color. Sunlight and air seem to help her. She would be of a good figure if she would straighten up, but her spine seems stiff and she walks like a grandmother, old and bent. She wants, however, to look better than anyone living. Once in a while she has a severe headache. Likes to read when the books are not exciting. She dances a little; sings a little; plays a little; works a little; visits with the girls and runs around after things at the stores. Sometimes she will forget what she was sent for and must call up to ask her mother. That is because she is 'thinking things,' as she calls it."

With these further facts before us, we think there is little doubt that this girl is a victim of pronounced dementia præcox. As you will appreciate, phases manifested by this trouble are so varied and the treatment called for depends so greatly upon the individual case that it is almost impossible to outline a treatment for this particular girl, even if it were practicable for such treatment to be carried out at home, which we seriously doubt. Our strong recommendation is that this patient be sent to a good institution the express object of which is, to care for just such patients until cured.

We understand fully the seriousness of the advice we are giving, but we understand also the gravity of the situation which we believe warrants this advice. Indeed, we will go a little further and say that, in our opinion, the family runs a risk every day the girl is at large, since there is no telling an hour in advance what these dementia-patients will do. It is for you to determine how much of this is to be imparted to the family; but, we repeat, it is our earnest advice that this young patient be subjected, with the least possible delay, to control and treatment in a proper institution.

QUERY 6257.—"Hypodermic Medication." H. A., Illinois, asks: "Is it advisable in, say, an acute attack of influenza, where the patient has pain all over, some fever, and is restless and nervous, to give a hypodermic injection?"

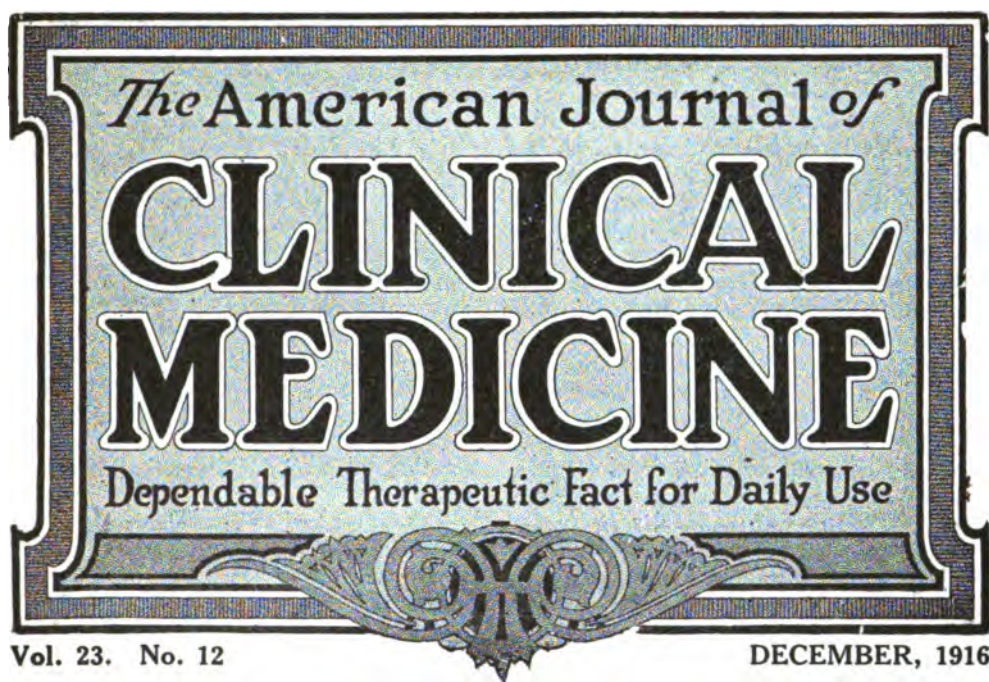
Suppose the patient lives miles away and there are bad roads to traverse, would you advise such procedure? Remember, I said, during fever. What effect would pilocarpine, when injected hypodermically, have in high fever? Would it be prudent to use it?"

Whenever immediate, quick action of any remedy is desired, its hypodermic administration not only is permissible, but it is advisable; in fact, very often we may thus secure the desired therapeutic effects of potent remedies, while preventing gastric irritation or other undesirable conditions. Of late, intravenous medication has been ardently advocated for more general application, and the hypodermic syringe is now being used more extensively than has been the case. Only a few years ago, the moment a doctor produced his syringe, the patient immediately jumped at the conclusion that he was receiving morphine; which, indeed, was the chief use to which it was put, except, also, for administering rapidly acting cardiac stimulants in emergencies. Today, hypodermic medication is employed on a much wider scope, and it would be perfectly permissible to give many drugs hypodermically, just as well as by mouth, during the stage of hyperpyrexia.

The mere fact that a patient lives a long distance away in no way militates against giving any potent drug hypodermically, since its action becomes apparent within a very few minutes, as a rule, and the physician then can maintain the effect by providing for the frequent administration of small doses of the same drug by mouth.

We should not hesitate to give pilocarpine hypodermically where the action of this drug is distinctly indicated, even though the temperature were high or the patient had pneumonia. In the latter case, however, pilocarpine should be used with extreme care. Bear in mind, always, that pilocarpine nitrate not only acts on the sudoriparous glands, thus inducing free perspiration, but also very materially increases the secretions of saliva and urine and thus usefully acts as a derivative in most acute congestions, particularly pulmonary, renal, and cerebral. It is especially useful in dry, congestive coughs and as a detergent in pleurisy. In this connection, we call attention to that extremely useful little manual by Doctor Webb, entitled "Hypodermic Medication."

As substitutes for cocaine, I mostly rely on gelsemium and hyoscyamus.—Alter, *Medical Summary*.



Carrel's Work with Antiseptics

ONE of the most interesting features of the great Clinical Congress of Surgeons of North America, held in Philadelphia toward the last of October, was the moving-picture "show" given late every afternoon in the auditorium of the Bellevue-Stratford Hotel. The first of these pictures, and the one which excited probably more interest than any other, showed Dr. Alexis Carrel and his associates in Hospital 21, at Compiègne, France, and presented "closeup" views of some of his brilliant surgical exploits. These views were explained by Dr. Fred H. Albee, of New York City, who also took occasion to illustrate Doctor Carrel's methods of treating infected wounds.

As has already been explained in these columns, the antiseptic most largely employed by Carrel is the carefully standardized neutral solution of the hypochlorites, as devised by Dr. H. D. Dakin. Since this solution was found to present certain disadvantages, further researches by Dakin resulted in the introduction, later, of another, altogether new antiseptic, similar in its action to the hypochlorite mixture, but presenting very decided advantages over that solution. This antiseptic, a synthetic derivative of toluol and chemically known as paratoluene-sodium-

sulphochloramide, has been introduced in this country under the trade-name of chlorazene. It may be of interest to the readers of CLINICAL MEDICINE to learn that its solution is being used extensively in Doctor Carrel's clinics in the same way as the hypochlorite solution.

Doctor Carrel has developed a novel way of employing his antiseptic solution in the treatment of wounds. In order that the germicidal agent may be able to attack promptly and surely and thus destroy the bacteria lodged in the wound, he considers it essential that the entire raw area be constantly bathed by the antiseptic used. This end he accomplishes by keeping the wound moistened by means of a series of minute rubber tubes radiating from a larger tube that is fed from a glass reservoir. The terminal tubelets are about the size of a small soft-rubber catheter, and they are fenestrated with minute side openings through which the solution is discharged into the wound. However, Carrel does not practice continuous irrigation, but allows just enough of the fluid to escape from time to time to keep moist the loose gauze dressing packed into the wound.

The effect of the antiseptic is measured by taking frequent smears from the wound

surface and counting the number of bacteria in the microscopical field; and not until their number has been reduced to a point so low that the possibility of reinfection (as determined by experience) can be excluded, is the wound allowed to close. Under this method of treatment, we are told, the rapidity of healing of the terrible tearing, crushing, deepseated, infected wounds produced by shrapnel, shells, and high explosives has been marvelous, indeed, and apparently the management of these lesions has been completely revolutionized.

In connection with this intermittent moistening, after the bacteria have disappeared Carrel employs antiseptic dressings or compresses to the healing wound, so as to keep it in an aseptic condition. For this purpose, we are informed, he uses a weak solution (as low as 0.2 percent) of paratoluene-sodium-sulphochloramide [chlorazene], likewise a cream containing the same antiseptic in a paste made with sodium stearate. It has been suggested that such a paste, because of its freedom from fat and the fact that it is water-soluble, would make an ideal application for the treatment of many common superficial wounds.

No doubt many of the readers of CLINICAL MEDICINE have seen the very interesting syndicated articles contributed to American newspapers by Sterling Heilig, describing the experiments conducted by Carrel, Hartmann, and DuNouy relative to the measurement of the rapidity of the healing of wounds. These experiments are described in detail in the November 1 number of *The Journal of Experimental Medicine*. DuNouy established the fact that there subsists a definite relation between the age of the patient, the area of the wound, and the rapidity of cicatrization. This relationship, as eventually worked out, can be expressed in a simple algebraic formula, and this, in the paper in question, is shown in carefully prepared curves. The practical value of this discovery is explained by Heilig as follows:

"For each wounded man, they draw the ideal curve of his recovery in red ink. It is done in advance after five, six or eight days' irrigation. So, they can predict two months in advance the exact day when his wound should heal with a dry scar. Then, day by day, beside the ideal curve, they line the curve of actual progress in black ink. The two curves ought to coincide. If the black curve of fact begins to get away from the red curve of biology, they know there is surely something wrong with the treatment.

"They hunt for the wrong thing. It may be a bad compress, a bad position in the bed, clothing too tight, improper nutrition, or even, possibly, a bit of infected clothing, almost microscopical, hidden in some deep fold of the wound. It must be something—and they always find it.

"Then, again, the black curve of fact catches up and runs beside the rosy curve of theory, like two bully, bounding, trotting horses hitched together to a buggy with pneumatic tires."

The plain meaning of all this is, that under this improved antiseptic method of treating wounds, checked up by DuNouy's algebraic formula and his curves, it is now possible for the surgeon to predict with almost absolute accuracy the date upon which a wound may be healed.

In working out this problem, Carrel conducted many experiments upon animals, while observations were also made on the healing wounds of soldiers. He describes as follows the method employed to sterilize these wounds:

"During the period of observation, the wounds were kept, by means of antiseptic and aseptic dressings, in as constant a bacteriological condition as possible. Every day films of the secretions, taken in different parts of the wounds, were examined. When the films contained bacteria, the wound and the surrounding skin were cleaned with a cotton sponge and neutral sodium oleate. Then, for a few hours, 0.5 percent of Dakin's hypochlorite or 1-percent paratoluene-sodium-sulphochloramide [in other words, chlorazene] was instilled into the wound. As soon as the bacteria had disappeared, aseptic dressings or compresses moistened with 0.2-percent paratoluene-sodium-sulphochloramide were applied. The wound remained aseptic for several days. If bacteria appeared again on the granulating surface, chemical sterilization was used."

This brings us back again to the problem of the antiseptic; for, after all, it is the introduction of an efficient antiseptic of low toxicity and practically no caustic action which has made this method of wound treatment possible.

One point that we wish to make is this, that the infection-producing bacteria and the bacteria-destroying antiseptic combine with one another in very definite proportions, and it should be possible to write this fact into another algebraic formula.

The problem, therefore, as Carrel was quick to grasp, is, to supply the infected

wound with a quantity of the germicidal agent in solution sufficient at all times to combine with and kill or to render innocuous any micro-organisms that may be present in it. Such an antiseptic, if it is to fulfil the ideal indications, should not injure the tissues and must be of such low toxicity that it may be employed in sufficient quantity or in sufficient concentration to combine with and destroy all the bacteria present at any time and thus keep the wound sterile.

The hypochlorite solution was a great step in advance. It is today, undoubtedly, one of the best antiseptics ever introduced, but the paratoluene - sodium - sulphochloramide goes a step farther. The hypochlorite cannot be used in a solution stronger than 0.5 percent. If the strength employed exceeds this even to the degree of 0.1 percent, wound irritation supervenes. Dakin's new antiseptic, on the contrary, while of equal germicidal power, may be used, without producing wound irritation, in 1-percent, 2-percent, or even in 4-percent solution, in other words, from two to eight times as strong as the hypochlorite; and it has the added advantage of being a definite chemical, being ready for immediate use, practically odorless, and stable.

The only objection to this new antiseptic is its costliness; but, considering the fact that it is much safer as well as all its other advantages, we believe that this will weigh but lightly with the medical profession of this country.

A few years ago, we were told that the day of antiseptics had gone by forever, that, hereafter asepsis was to be the method of treatment; and the studies of Sir Almroth Wright and the experience of a large number of surgeons seemed to give justification of that belief. But, the Great War, with its thousands and thousands of injured, bringing back in a degree which mankind never had experienced, and never expected to experience, the great problem of dealing with infected wounds, has again modified the methods of surgical practice and today is leading us straight back to our faith in Listerism.

It may be that the marvelous achievements of Carrel are swinging the pendulum too far in the opposite direction. As to that, only time can tell, but there is not the slightest doubt that, through the methods which he has introduced, Carrel is today saving thousands of limbs and thousands of lives. As to the truth of this statement, we have the testimony of a number of eminent American

surgeons who have seen Carrel work and know what he is doing.

PUSH THE KERN-DOREMUS BILL

In the October number of *CLINICAL MEDICINE* (page 809), we called attention to the introduction by Kern, in the United States Senate, and by Doremus, in the House of Representatives, of a bill designed to legalize the sending of poisons, particularly medicinal substances, through the mails.

It is not necessary to tell our readers again what a handicap has been placed upon the medical profession by the present construction of the law. As now interpreted, it is illegal to send through the mails such common remedies as aconitine, morphine, strychnine, arsenic, nux vomica, digitalin, not to name the host of other medicinal substances in everyday use, irrespective of what the form, whether in tablets, granules, liquids or powder. The only recognized method of transmission of these substances to the consumer is by express or freight. The physician who happens to live on a rural free-delivery route, ten, twenty, fifty or more miles from a railroad station is, under this ruling, practically prohibited from receiving the medicinal tools of his trade.

This situation is wrong and should be remedied. We suggest that every physician who reads these lines write to his congressmen and senators and urge them to use their utmost efforts in pushing through this bill. Now that the election is over, there is no reason why our servants in congress should not give careful consideration to the interests of the medical profession and the people whom they serve.

Circumstances are the rulers of the weak—they are the instruments of the wise.—Samuel Lover.

THE STATE ANTINARCOTIC LAWS

Every physician should read the November number of *The Medical World*. As usual, it is full of excellent material, but of special importance in this issue is the review of the state antinarcotic laws, presented in the first editorial. During 1916 and 1917, forty-one state and three territorial legislatures will be in session. In a large number of these, new antinarcotic bills will be introduced, and it is the duty of the medical profession to see to it that before any of these bills become law they have the careful scrutiny of students

of this topic and are made to accord with the requirements of medical practice. The highest possible degree of freedom for the practitioner should be provided for and no legislation should be permitted that will interfere with the legitimate and proper exercise of his rights as a practitioner of medicine.

Antinarcotic legislation is a necessity, and the laws already enacted have uncovered great evils. However, in the execution of these laws defects have appeared that, by all means, must be remedied. The physician should be on the right side of this movement. He should encourage the passage of the right kind of bills, yielding on the minor matters, when necessary, to insure best results for the people, and particularly for the many thousands of addicts throughout the country.

The feature of these laws especially calling for revision are those in force in the various states dealing with the care of these unfortunates. One sad result of current legislation has been the depriving of these victims of narcotic supplies, without any provision for their adequate and humane cure or care. This feature of the legislation deserves more than passing consideration by the profession. It would be a good thing if a conference of medical experts could be held for the framing of model legislation to deal with this phase, and in this connection we suggest that *The Journal of the American Medical Association* should take the lead, cooperating as far as possible with the National Drug Trades Conference.

Every physician should show in a practical way—meaning by his subscription—his appreciation of the efforts of Doctor Taylor, of *The Medical World*, to throw light upon this important topic.

Everything worth while in life is simple and made of very humble substance. To view life as it is, to see what is actually happening, one needs just a pair of good eyes, and in order to understand what others say, the things that they really mean to say, one needs knowledge of the language and a pair of good ears.

CHICAGO THE WORLD'S GREAT MEDICAL CENTER

There is something electrifying, at least to a citizen of Chicago, in the announcement made in the newspapers a few days ago, that Chicago is to take the place of Berlin, Vienna and the other great medical centers of the Old World as the Mecca toward which many a physician and surgeon will turn his eyes and his footsteps when the shekels jingling

merrily in his trouser-pockets suggest the possibility of a postgraduate course. Many of us have known that there was a plan on foot for the larger development of the medical resources of this city and for the improvement of medical instruction, but we did not appreciate how great this actually was until the newspapers announced that the Great Plan was almost an accomplished fact.

And this is the plan: The General Education Board and the Rockefeller Foundation have each pledged \$1,000,000 for medical education in Chicago, this donation made contingent upon the raising of \$3,300,000 by the people of this city. Of this sum, \$1,200,000 has already been subscribed, and the public has been assured that there is every prospect that the rest will be raised before spring. In addition to the \$5,300,000 provided in this way, the new institution is to have turned over to it the financial resources of Rush Medical College, the Presbyterian Hospital, and a group of other institutions, representing a total investment said to be far in excess of \$3,000,000. The University of Chicago provides a building-site along the Midway, on the South Side, for the new undergraduate building, said to be worth \$500,000. Consequently, the new institution will begin its career with property representing a value of from \$8,000,000 to \$10,000,000.

This great endowment and building-fund is to be distributed as follows: Rush Medical College and the undergraduate medical instruction of the University of Chicago are to be combined in one great institution, to be located on the South Side. The name of this institution will, presumably, remain Rush Medical College, and it will become a full department of the University of Chicago.

The old Rush Medical College building on the West Side is to be torn down and replaced by a great research-laboratory. The rich clinical facilities of the Presbyterian Hospital, Cook County Hospital, and the other hospitals belonging to this group are to be utilized for a great postgraduate school at this center, where instruction will be given to physicians in connection with the research-work provided, and which will be carried on in the same locality.

Thus it will be seen that the new institution is to comprise three sections: (1) a great undergraduate school, (2) a great postgraduate school, and (3) a great research laboratory.

The institution as a whole is to be under the direction of Dr. Frank Billings, present dean of Rush Medical College and one of the fore-

most leaders of the modern school of medical thought in this country. All the instructors in this great institution are to be full-time men, that is to say, all are to receive ample salaries and, hence, are to devote their entire time to the work of the institution, and to abstain from all private practice.

This is a colossal plan—truly Chicagoesque. The motto of this city is, "I Will," and we believe it will be typified in the achievements of this institution, which promises new victories and new ideals for the medical profession of this country, a medical profession of the newer, nobler, and more highly trained type.

May this glorious dream soon become a more glorious reality.

Resolve is what makes a man manliest: not puny resolve, not crude determination, not errant purpose, but that strong and indefatigable will, which treads down difficulties and danger, as a boy treads down the heaving frost-lands of winter; which kindles his eye and brain with a proud pulsebeat toward the unattainable. Will makes men giants. It made Napoleon an emperor of kings, Bacon a fathomer of nature, Byron a tutor of passion, and the martyrs, masters of Death.

—Ik Marvel.

THE STANDING OF THE ALKALOIDS

Friends of CLINICAL MEDICINE write us: "Why is it that you have so little to say about the alkaloids? Have they failed to meet the expectations based upon them? Or have you found something better in the newer additions to our therapeutic armamentarium?"

Neither the one nor the other. CLINICAL MEDICINE nowadays is printing less about the alkaloids simply because so much that is worth saying has been said.

The alkaloids have been extracted in chemical purity and presented in pharmaceutical perfection. They have been tested experimentally with scientific precision, and the rules for their application have been laid down with a certainty as for no other remedies, excepting the chemically pure mineral salts. The influence of the alkaloids over the physiologic functions is definitely known as in the case of no other drugs. Their proper employment in disease has been deduced from the data here mentioned, and has been confirmed by their clinical application all over the world by the best clinicians our profession can boast.

All this mass of information has been brought together, sorted, sifted, digested, and published in the two great volumes on active-

principle therapeutics and practice. These works represent the labors of twenty years, during which the authors consulted all the textbooks on therapeutics in the English, French, German, Italian, Spanish, Portuguese, Russian, and several other tongues, besides great numbers of pamphlets and periodicals. The net result is, the two big volumes mentioned. They are veritable mines in which lies many a gem awaiting the fortunate discoverer. They are condensed cyclopedias of that most essential knowledge of how to treat the sick.

The work has been carried down to the point where the clinician can take and apply it to his needs. Hundreds or even thousands of suggestions are there given, any one of which may be developed into as brilliant a triumph as that won by Rogers with the alkaloid of ipecacuanha. The writer and compiler has done his share—it will require the entire practicing medical profession to carry on the work to its completion.

This is why of late we are saying so little about the alkaloids. We have said our say. The next step is, not saying, but doing. It is up to you.

Wait, oh, wait, till coal is cheap;
Wait till love is true;
Till promises are made to keep
And notes are paid when due;
Wait till the sun grows leaden cold;
Wait till your ship comes in;
Wait until unwed maids grow old,
And virtue conquers sin;
Wait till life is a happy dream,
And men are deceivers never;
Wait till things are what they seem—
Wait—and you'll wait forever.

—Chicago News.

"THE DEFECTIVE," OR SYPHILIS AND HEREDITY

The other night I saw Dr. Harry W. Moore's play "The Defective," as it was rendered in the tabloid version at the Wilson Theater (Chicago). Of course, the plot hinges upon the problem that stirred up such a storm in its airing in the Haiselden affair about a year ago, and it also deals with the dysgenic influence of syphilis. The plot, in brief, is this: The curtain rises upon Doctor Hawtrej in his study, who is heard to call up the suitor of his daughter, evidently a young man, and to tell him that a Wassermann test which had just been completed gave a positive result and that he, Kendall, never would be permitted to marry the Doctor's daughter or any other girl. Soon afterward, the daughter comes into

the study to visit with her father and is told, without explanation, that she and Kendall must not marry.

Left alone, the Doctor is just about to sit down in front of the fire, when a ragged hunchback sneaks into the room and, with gun leveled at him, demands that he be given "dope." After some parley, the Doctor gives the degenerate a hypodermic injection. When the drug begins to exert its effect, the victim tells his story of how his parents, both diseased, conceived him in iniquity and left him at the untender mercies of the world, a little hunchback, distorted from infancy; how he was raised in an asylum from which eventually he ran away; how he knew nothing else but the ways of the underworld, nothing but crime and filth and dope; how despite his unlovely appearance he became friendly with a girl, how his heart failed him when it was too late and how he ran away. He curses his parents, he curses the world and himself.

The telephone rings, and the Doctor is told that a certain young woman had just given birth, at the hospital, to an infant that was deformed, and which could live only if he would perform a certain operation. The hunchback hearing the name of the infant's mother knows that he is its father and that his offspring is defective like himself. The Doctor informs the hospital-physician that he refuses to operate and to give the baby a chance for life. His unbidden guest thanks him and, as he leaves the office, shoots himself.

The lesson which it is intended to convey and to drive home in this little play, of course is a very important one, one that needs to be shouted from the housetops and to be dinned into the ears of people, young and old—but especially the young—until there no longer can be offered the excuse that they do not know. But, while the lesson is true and needs must be told, why not adhere to the truth in the telling? Why convey the impression that a young man whose blood shows a positive Wassermann reaction never can marry? Why infer that a cripple must, necessarily, propagate cripples? Surely, as a rule, the truth is solemn enough and impressive enough without having to be bolstered up with cheap and manifest exaggeration and even obvious untruths. Certainly, it would be so much more simple to teach people that the unfortunate victim of syphilis is not absolutely doomed, but that he can be relieved of his scourge, even though it be at great sacrifice, through a persistent course of

treatment for a period of from three to five years.

If every person, once a syphilitic had to refrain entirely from reproducing his or her kind, even though cured of the disease, the birth rate would diminish even more than it has done during the later decades. There is such a thing as a cure of syphilis, but it requires years of treatment and can be established only by freedom from all symptoms, including the positive Wassermann test, during an observation of, say, two years. But, when all conditions are complied with, the cured luetic may be permitted to marry with greater safety than may the "cured" gonorrheic, and with greater confidence that no dysgenic results will be visited upon his children, especially if the mother is treated during her pregnancy.

The author of the play in question, being a physician, would have been more true to his calling and more true to facts if he had driven home the lesson in accordance with the truth, instead of overshooting the mark and pretending that syphilitics may not ever marry. In doing so he invites the breaking of the rule that he establishes, and encourages deceit and neglect.

In the other matter, that of the unfortunate hunchback whose story is told so touchingly, physicians and biologists cannot but smile at the idea suggested in the story: that physical deformities will be reproduced in the offspring, when it is known to the laity even, but certainly to breeders of animals, that such an event is very exceptional.

In telling this story of Haiselden, the lesson could have been drawn just as impressively, indeed, much more forcefully and convincingly, if the damnable effects of a rotten environment had been put in their true, unfavorable, light, rather than the fact of the physical distortion. It does not appear that the hunchback's parents were guilty of anything but physical distortion, poverty and ignorance. It may be inferred, perhaps, that they were syphilitics, likewise, but that fact is not mentioned. It might be assumed that they were alcoholics, epileptics, and subject to other forms of degeneracy, all of which would have afforded a useful and true lesson.

Of course, I do not know whether these things were not brought out in the original version, but I submit that the physician-author should see to it that the tabloid version of his "play" is true to fact. It is only truth that is a good teacher. Untruth will defeat its own ends. Nevertheless, the lesson which

it is meant to preach is a good one, and plays of this kind may properly be made use of to teach the public.

Those "in authority," who regard innovation from the viewpoint of heresy, recall the *bon mot* by a witty compatriot of Talleyrand, who, in commenting on the conservatism of the latter said, if Talleyrand were present at the creation, he would have exclaimed: "Good gracious! Chaos will be destroyed."—Albert Abrams.

ON THE ABSORPTION OF DRUGS

Doctor, if you think that drug-therapeutics is exhausted, that all there is to be known about drugs has been discovered, just do this thing: Take any drug you choose, the one you know best, and tell us exactly what it does, how long it takes to get into action, how soon the height of its activity is reached, how long this is maintained, how long it takes to decline, and how and when it gets out of the system, if not utilized as a food in the body or broken up into decomposition-products. If you can tell this of a solitary drug in the Pharmacopeia, you sure know more than some other physicians do.

But, if you can not tell this about every drug in the list, you hardly can assert with plausibility that drug-therapeutics is an exhausted science. And neither you nor all the doctors in the world collectively can truthfully claim this knowledge of every official drug—for, this knowledge does not exist. After a lifetime spent in the study of drugs and their properties, the present writer can say, as the net result of his studies, that the surface of this field has scarcely been scratched.

Here is one of the things that encourage us in the hope that some day yet this topic may begin to receive some attention:

In *The New York Medical Journal* for April 15, Leroy D. Swingle, of the University of Utah, presents a study of the factor of absorption in drug-therapeutics. Just take his opening sentence as an index: "In general, the intensity of action of a drug depends upon its concentration in the tissues; so, the problem in therapeutics generally is, to bring the concentration of the drug in the tissues up to the point of modifying to the desired degree the function of a given organ without unfavorably involving other organs."

There is here a conception of drug-action quite different from that of disease-specifics.

Absorption and excretion are not, however, uniform in all individuals, nor at all times in the same individual. Hence, there is always a necessity for watching the action of a medi-

cine. As we have often remarked, by attending to the therapeutic accuracies, we may remove most of the uncertainty from our drugging; but we must remember the difference in the individual reaction against the drug.

The morphology of the sheep-tick renders it especially liable to the influence of volatile drugs, so that these substances, even if of low toxicity for protoplasm, possess high toxicity for these ticks. Chloroform, to them, was determined to be 100 times more toxic than an equal solution of chloral hydrate, the difference being attributable to the volatility of the former. The difference being due to the physical properties of the drug, which determine the quantity that could be brought into action upon the tissues, and not upon any specific toxicity toward this creature, it is evident that the question of absorbability is of the utmost importance.

The rapidity of diffusion is quite different for different drugs. It is a question to what degree we can utilize muscarine, since it is eliminated with such swiftness that it is scarcely possible to accumulate a therapeutic dose in the body, unless it is injected intravenously. Just how one is to secure the full action of podophyllin, when this drug, which requires fourteen hours for its activity to develop, is followed by salines demanding only two hours, is one question for the advocates of this combination to solve.

Salisbury called attention to the fact that when drugs are taken into the stomach, they are carried by the portal vein to the liver, which then throws the greater part of their active content out into the bowel for excretion. The effects are due to that part which escapes the hepatic sieve and enters the general circulation. But, if the remedy be absorbed from the buccal mucosa, it enters and passes through the general circulation before it reaches the liver; hence, the effect of a given dose must be much greater. Is this true when put to the test? How many readers have made observations of the matter? If correct, it is too important to be overlooked by any careful clinician.

This writer recollects one case, occurring in his far-distant youth, when he lost a promising patient through his own presumed negligence. The lady was taking tablets of terpin hydrate, and the doctor was anxiously watching for the promised effect (it was his first trial of the remedy), when the patient discovered that the tablets were passing her bowels and being ejected, little if any the worse for their heroic trip. She at once concluded that the doctor must be paying very

little attention to her case, if he had not seen that his medicines were not doing anything—and she changed her medical adviser at once.

Take any water-soluble remedy, dissolve the dose in hot water and take it into the mouth, holding it there as long as possible; and the activity will be manifested almost or quite as quickly as if it were taken subcutaneously.

All things on earth have their price; and for truth we pay the dearest. We barter it for love and sympathy. The road to honor is paved with thorns. But on the path to truth, at every step you set your foot down on your own heart.—Olive Schreiner.

ORGANIZATION OF A NATIONAL RESEARCH-COUNCIL

Arrangements have just been completed in New York whereby the resources of the Engineering Foundation, under the auspices of the four principal national engineering societies, are placed at the disposal of the National Research Council, which was appointed by the National Academy of Science at the request of President Wilson. The object of the council is, to coordinate the scientific research-work of the country, in order to secure efficiency in the solution of the problems of war and of peace.

In indicating how thoroughly every branch of science and engineering is represented in the council, attention is called to the personnel of the body, in accordance with the purpose of the council to enlist the cooperation in the solution of our industrial and military problems of a scientific character, of every possible established agency. Medicine, for example, is represented on the council by Dr. William H. Welch, president of the National Academy of Science; by Brigadier-General William C. Gorgas, surgeon-general of the United States Army; Dr. Simon Flexner, director of the Rockefeller Medical Institute; and Dr. Victor C. Vaughan, past president of the American Medical Society; while biological science is represented by Dr. Edwin G. Conklin, of Princeton University; chemistry, by Dr. A. A. Noyes, of the Massachusetts Institute of Technology, and Dr. L. H. Baekeland; physics, by Dr. A. A. Michelson, of the University of Chicago; and electricity, by Prof. M. I. Pupin, of Columbia University. In addition, there is a strong representation from the great engineering societies, while the important military aspects will be presented to the council by many of the leading military authorities.

The council, thus, includes representatives of all of the important scientific activities bearing upon military or industrial problems. The executive-committee's plans are of wide scope, and the support already pledged will insure immediate action where the need is greatest.

A similar organization in England has been of immense assistance to the British government during the war. The American organization should be of equal value to our government, but it is hoped that the industrial benefits will be no less important than the military ones.

There is no logical reason why women should suffer during labor. Surgeons will not permit their patients to suffer during an operation. Suffering, physical or mental, produces surgical shock; it increases the danger of puerperal complications, and delays the convalescence. The suffering can be relieved, and with perfect safety to both mother and child.—C. H. Davis.

HOW DO DIURETICS ACT?

If we except the expectorants, no class of remedies is administered with as little real knowledge of their mode of action, of just how they operate as are the diuretics. In our student days, the professor once asked the class what division could be made of these agents. One volunteered the suggestion that they might be divided into diuretics that increase the fluid (water) and those that increase the solid elements renally excreted. To the further query, as to what agents might be placed into the latter class, nobody replied. Reference to the textbooks gave no information upon this point. The teacher told the class that colchicum increased the output of urinary solids.

This statement directed our attention to the meadow-saffron. Turning to the books, we found that, of this plant, not less than six classes of fluid preparations were official, namely: the fluid extracts, wines, and tinctures of the seeds and of the corm. Upon our inquiring of our preceptor which he considered the best, he said that neither of them was any good; personally, he used only an English wine (whether of seeds or corm, was not said).

Since that remote period, some progress has been made. We have become able to study the vasomotor conditions back of deficient urinary excretion, and have learned to apply our remedies in accordance with our finding. When the vascular tension is so high that the constriction of the renal arteries pinches off the blood supply to the glomeruli,

the urine becomes scanty; and then we administer vasorelaxants, such as veratrine. When, on the other hand, the capillary circulation has given way and general anasarca is present, the laboring heart vainly trying to propel the blood through this swamp, we endeavor to canalize the blood-channels and, so, resort to the vasoconstrictors, such as apocynum.

It is obvious that in both conditions named success lies in securing an exact balance of circulatory tension, since overaction in either instance will induce the opposite fault and thus nullify the potential benefit.

This classification, however, leaves out of calculation the saline diuretics, for the action of which we never have met a satisfactory explanation; unless it be that they act as diuretics solely through the water drunk with them. They may, it is true, induce some form of irritation of the renal secretory structures, but this can not be of a nature such as is exerted by the volatile oils, like juniper-oil. This writer has found that small doses of the latter oil certainly do increase renal activity, but whenever the doses were increased the urine secreted became so scanty that he grew alarmed and stopped the experiment. He can not conceive that such remedies are safe or that the delicate and vitally essential renal cells should be subjected to such forms of irritation. Besides, he has not been able to think of any form of disease in which such medication would be required and no other kind be available.

Thus far we have been considering the urinary excretion as a whole; now we may ask as to what has been the progress, since the year 1870, in studying the effects of drugs upon the various solid constituents.

Widal was the first one to call attention to the importance of deficiency in the excretion of urea and of the significance of its retention in the blood. Busquet has presented the more recent work in this direction, in a paper in *Le Monde Medical* (No. 349, p. 195).

Drugs of the caffeine group stimulate the excretion of urea, and also of chlorides and water. Squill notably increases the urea output, but has scarcely any effect upon the volume of the water of the urine; that is, in healthy subjects. However, in those suffering from retention of urea, the effects are much more remarkable; for, even when theobromine and adonidin had failed in Busquet's hands, squill gave prompt and decided relief in this condition.

Chevalier has spoken of the diuretic action of mistletoe, in which he discovered an alkaloid. He and others found that mistletoe increased the excretion of chlorides and of urea; Busquet, however, has failed to verify this, using poplar or May-month mistletoe. The extracts used, however, were too crude and uncertain for modern testings.

Pic determined that the formiates and sugars also increased nitrogenous excretion, but confirmation has not yet been afforded.

A true diuretic of the class in question not only must increase the urinary urea, but must lessen the proportion of urea in the blood. Otherwise, the addition of a peptone-solution to the ordinary diet would be diuretic. In two azotemic (nitrogen-retaining) patients, Busquet found that the daily use of squill (15 milligrams thrice daily) reduced the proportion of urea in the blood, from 0.65 and 0.80 per liter, to 0.39 and 0.45, respectively, after 10-days' treatment. The first figures were obtained after these patients had been for two weeks on a hyponitrogenous diet, after which the squill was commenced. However, it was found that the increase in urea excretion lasted only during the first four days of administration of this drug. By that time the urea in the blood had decreased to the point where squill no longer acts, since it requires a certain proportion of urea for any excretory effect to be manifested.

The conclusion of this valuable paper deserves being quoted entire:

"Squill remains, in the hands of the therapist, a valuable means of combating a syndrome which commonly presents itself in the course of nephritis, namely, renal impermeability to nitrogen. From the doctrinal point of view, the investigation of the properties of squill gives prominence to the view—important to the clinical physician, and previously formulated by Widal, on the strength of his observations of Bright's disease—that the excretion of urea determined does not warrant any conclusion as to the proportion of urea circulating in the blood. This principle is established both by pharmacodynamics and by pathology, and it should be borne in mind whenever we undertake the investigation of azotemia in the patient. Lastly, our knowledge of the stimulating action exerted by squill upon the cells that excrete urea suggests interesting data for further research. It is not unreasonable to infer that the histological renal lesions provoked by large doses of this drug bear precisely upon those parts of the uriniferous tubes through which urea passes, so that squill,

possibly, may enable us to study the elective activities of the various canalicular segments."

It is in the petty details, not in the great results, that the interest of existence lies.—Jerome K. Jerome.

TOXEMIC DELIRIUMS

The more important is a newly discovered truth, the greater is the opposition its promoting arouses, and the difficulty experienced, before it wins general acceptance. It is quite natural that, the further the truth penetrates into the foundations of human thought, the greater is the difficulty of the general human mind in adjusting itself to the new idea. Nor is any such fundamental truth ever accepted at once, or by general consent, as is, for example, a vote of congress. Rather, it slowly, imperceptibly, permeates the human mind, until finally it becomes a part of the subconscious possession, sometimes even the ultimate basis of our belief and reasoning.

This seems to be true in the case of auto-toxemia. One cannot compare the writings of recent authors with those of a decade ago, without noticing the degree to which this principle is being accepted and used as a basis upon which reasoning is built.

For instance, we find an exceedingly interesting paper in the June number of *The Illinois Medical Journal*, by Douglas Singer, of the Illinois State Psychopathic Institute. The article is entitled: "Toxic Delirium, and Its Management." The reading of this paper leads one to ask whether the opening word of the title, "toxic," be not tautologic, since in the enumeration the Doctor gives, there appear nothing but exceptional cases of delirium. The name is to him merely a symptom, denoting the effect of a poison, circulating in the blood, as exerted upon the brain-cells. However, in infectious diseases, it is a bad prognosticon. But this is simply because it is an index of the degree of toxemia present and the virulence of its impression upon the centers of life.

In cases of autointoxication, there is evidence of brain involvement, shown by malaise, difficult concentration, poor judgment, and irritability. Delirium is not an indication for any specific remedy, but rather of an impress made upon the brain by one or other of some toxic substances, the nature and production of which must be estimated before applying the treatment. The resistance of each individual to a certain kind and quantity of toxins is to be considered as well.

A toxic blood supply to the brain-cells means abnormal cell metabolism. The resulting disorder of conduction-function can only be shown in one of two ways—an increase or a lessening of excitability. There is no question as to the secretion by the nerve-cells or other secretory organs, but rather of an increased or lessened activity of these cells.

This effect by no means is uniform. Some toxins possess a special affinity for certain groups of nerve-cells, and some cells are better able to withstand toxins than are others. Hence, there may be marked differences in the pictures resulting. The cerebral functions that were earliest developed are naturally more resistant than the later ones, consequently brain intoxication will induce first disorders affecting functions of a later development of the intellectual advance.

No doubt there is a difference in the reaction of the human brain to different toxins, and for some a certain special immunity seems to have been acquired. Atropine especially affects the eyes, whereas cocaine exerts its greatest action upon the skin. The high degree of differentiation of the earliest groups of nerve-cells also makes lesions of them much more disastrous than, for instance, those of the kidneys, where, all of the cells being alike and there being a surplus above those required for ordinary use, a large portion of them may be destroyed without seriously injuring the individual.

For a while, delirium may prove temporary, to the extent that the patient does not die from the toxemia, yet, he does not always fully return to his previous mental level. An illustration of this is the mental deterioration that sometimes follows a severe attack of typhoid fever.

Singer groups the toxins that may give rise to delirium as follows: those which result from (1) the use of drugs and food, (2) from microorganisms, (3) from organic disease interfering with excretion, and (4) from strictly autogenous intoxications of very obscure nature, such as those following severe emotional crises.

His chapter upon treatment is equally as interesting. A routine is impossible. He points out that, dealing with a temporary disturbance, the main objects of symptomatic treatment must be, to preserve strength and avoid death through exhaustion. Delirium itself occasions a considerable increase in metabolism, especially when high fever is present. Elimination will sometimes diminish the reaction, although intoxication is

present. This naturally points to the importance of the supply of water. Many times these patients take far less than is desirable. In a recent test, the red blood-cells were found to reach seven million per mil (ccm.) Restlessness was markedly diminished after the subcutaneous administration of physiologic salt-solution. However, the change was only temporary; nevertheless, it was highly significant.

It must not be forgotten that the cells of the digestive tract suffer as well as those of the cerebral centers, and consequently the digestion and assimilation of food may be impaired. At the same time, delirium means increased metabolism. The food should be supplied, therefore, in forms easily absorbed and affording a large hemogenic value. For this reason, liquid food is better, and this may be predigested. The sugars are of especial value, as being easily combusted and materially saving nitrogenous constituents, which are not so readily absorbed.

Doctor Singer favors the moderate use of alcohol, the daily dose for an adult being named as that represented by 3 ounces of whisky. He considers this a readily available source of energy, easily absorbed and readily oxidized. It must be taken, if at all, well diluted. But, while it may help the appetite and exert a little narcotic effect, alcohol must not be regarded as a cardiac stimulant. Quite frequently these patients refuse food and the problem of feeding them is an exceedingly difficult one. If the feeding by mouth is not very satisfactory, then, in the case of women, the vagina will be found to absorb far more nutriment than does the rectum. This has been determined by observation.

It must be remembered that starvation is a common source of delirium. The refusal of food is, however, not always a simple effect of toxemia. The present writer well remembers a case in which the patient, demented, eventually died after a long continued refusal of food and despite every effort made to feed him. At the autopsy the stomach was found to be contracted to such a degree that it held less than one ounce.

The importance of rest, quiet, darkness, and good nursing are mentioned by Singer. However, these are not always possible of attainment in a large institution holding many and varied cases.

Hydrotherapy has its values and its dangers. A prolonged bath may afford some needed water to the system. Undoubtedly it also removes a great deal of the toxic matter

excreted through the skin. This excretion must be considerable when the patient lies in a warm bath for a long period. Doctor Singer cautions against the indiscriminate employment of these measures, having, as he says, seen more than one patient collapse in pneumonia from applications of water. The patient may lie in a cool pack for one or two hours, and, if he falls asleep, may be left until he awakes spontaneously.

Doctor Singer's paragraphs begin with a warning against the prescribing of morphine. When hyoscine is given, he prefers that it should be used alone. This alkaloid has little effect upon the heart, while reducing motor restlessness; nevertheless, it depresses the respiratory centers, a fact that should induce caution in its administration. Paraldehyde is probably the least objectionable hypnotic, the objection to it being its very unpleasant odor and taste. Chloral in moderate doses is safe, but, in larger ones, a powerful cardiac depressant. Trional acts much more rapidly than sulphonal. Sometimes the two may usefully be combined. Veronal is more toxic, through its being less rapidly excreted. The bromides are of very little value.

Doctor Singer warns against the indiscriminate use of the cardiac stimulants. Strychnine is not a true heart stimulant at all, but increases the excitability of the nerve-cells of the cord and medulla. Hence, in these conditions, it should be given with great caution. Digitalis is slower, but forms our chief aid. Some things that are possible to happen, are, the occurrence of bed-sores, the patient's running away, and his committing suicide. These must be guarded against.

The present writer wishes here to call attention to an exceedingly potent remedy in such conditions, formerly in use; namely, antimony. It has been many years since any reference to the use of this oldtime remedy, for any purpose whatever, has been seen in any medical journal. Nevertheless, it is one of the most tremendously powerful agents at our disposal for the quieting of acute delirium, whether febrile, alcoholic or emotional. This sedative effect we now may attribute to its rapid stimulation of the eliminants, by which the toxins generated by the disease are carried out of the body, until the cerebral centers are restored to normal function. We have seen a patient with a wild, fighting delirium of the preliminary stage of typhoid fever, requiring a number of men to control him, reduced inside of twelve hours to a rational condition of mind, with the

eliminants all acting and the fever well down, after a rapid course of tartar emetic. This was accomplished without danger to the patient, and was followed, in due course, by his complete recovery from the disease.

There was good reason for the popularity of antimony among our forefathers, as well as for that of calomel and bloodletting. When the revival of therapeutics takes place, it undoubtedly will be found that we can with advantage go back, in proper cases, to the use of these powerful remedies. True, they will never be used as indiscriminately as they were, and, moreover, they will be prescribed with a correct idea of their real action; but, as our realization of the importance of toxemia grows, so will our resort to the eliminants increase. We even may see antimony restored to its pristine place as our main reliance in the treatment of pneumonia of the sthenic form. That the remedy was abused, is no reason why we should deprive ourselves of the advantages accruing from its correct employment in suitable conditions.

THE VITAMINES IN THE DIETARY

The venerable Samuel D. Gross once remarked to us boys that he had never known an adult man to recover robust health on a limited diet. "The needs of the human body are so many that a diet containing the greatest possible variety affords the best results." This again illustrates the folly of basing our reasoning on the presumption of our complete knowledge of any matter. We must never forget that we, individually, possess but a small modicum of the knowledge attained by the human race; and then, that the whole mass of human knowledge is but a little fragment of the absolute, full truth.

Fifty years ago, we did not know why man requires variety in his diet or why it is such an impossible task for anyone to eat a quail a day for thirty consecutive days. We do not know much more today; still, we do know a little more. However, researches of the kind now being conducted at the Wisconsin College of Agriculture, and described by Prof. E. V. McCollum in *Hoard's Dairyman*, give the promise of much—of the dawn of a better day. Here are a few brief notes about this interesting work.

It has been found that when animals are fed on a balanced ration of purified foods, foods containing the proteids, carbohydrates, fats, and salts, in requisite proportions, the animals nevertheless failed to grow unless,

egg- or milk-fats constituted part of the diet. Upon removing the egg-fat, growth stopped. No other fats could replace the fat of egg or milk for sustaining growth. Further, when the fat of the egg-yolk was left in, but most of the rest of the yolk removed, growth also ceased. When, next, the fat-free yolk was treated with water and filtered, and then this water added to the food, growth was resumed.

It was evident that there are in the egg two substances essential to animal growth, one a component of the fat, the other a water-soluble principle contained in nonfatty portion of the yolk.

Similar observations were made with regard to meat, alfalfa, and the cereal-grains. An aqueous extract of the latter promoted growth; but when these extracts were dried, and incinerated, the ash did not possess this power. Consequently, it was not a question of calcium, silicon, sodium or any other chemical element, but the thing was an organic something that is destroyed by heat. This second essential element, as now is well known, is widely distributed in the vegetable world, although not universally, and those races that live on polished rice and fish contract beriberi for the lack of it. Polishing rice removes the germs, as does milling in the case of very white wheat-flour. These two essentials to growth are now known as vitamins; since, however, they differ notably for each kind, McCollum proposes that they be designated as fat-soluble A and water-soluble B.

While these vitamins are essential to growth, they can not sustain the body alone. The human body requires proteids in many forms, and these should be supplied in fixed proportions. Too little of one renders the rest unavailable, as the builders of a house must all stop work if, for example, the plumbers are behind with their part. European investigations indicate that the protein is split up into at least eighteen products. If any food lacks one of these so-called amino-acids, it must be supplemented by some other food containing it. These amino-acids are not interconvertible.

Now we begin to see the scientific basis for our revered preceptor's sage observation. The man who insists upon a varied diet has a solid argument to back up his position.

But here we draw the line—the admission of the vitamins proves only their value, and this need not open the door to a flood of mysticism and reviving superstition.

Leading Articles

Remarks on Criminal Mutilation of the Genitalia

By G. FRANK LYDSTON, M. D., Chicago, Illinois

CASES of criminal mutilation of the genitalia are far more frequent than the medical profession in general supposes. The assault is most often committed by the male; still, the female is more frequently guilty of criminal mutilation than the published cases would lead us to believe. The secretiveness of the male who thus has been mutilated by the female readily is understood, and it also accounts, in a measure, for the relatively great infrequency with which women are brought to book for criminal acts of this nature.

The psychology of cases of genital injury by criminal assault varies. As originally formulated by the author, they are:

1. Simple jealousy. Women sometimes not alone injure the offending male, but also the female rival, making the genitals the object of assault. The male often makes the genital organs the objective point of assault upon a rival. The dominant idea in most cases is, revenge.

2. The desire to deprive a rival of what seems to the jealous person the chief point of interest to the rival.

3. A desire to punish the one at whose hands the assailant has suffered injury in this domain.

4. A "dog in the manger" sentiment. Both women and men have been known to commit sex mutilation on persons in whom they no longer had a sex-interest.

5. The desire to protect oneself from future encroachments on one's sexual rights. A comparatively recent famous western case is in point.

6. Insane impulse.

7. Reversionary instinct, resulting in sadism. Apropos of this point, the attack of the female spider and of the female mantis religiosa upon the male after copulation are illustrations.

The author of this paper has met with a number of cases of mutilation of the penis by

jealous women, and two cases of complete amputation, besides the one herein recorded. A fourth case has been reported to him by a colleague. Quite recently, also, a case came under his observation, of mutilation of the testes produced by a similar agency.

Wound of the Glans Penis

Case 1. A man thirty years of age quarreled with his mistress, who had become jealous of his attentions to another woman. The following night, while the man was asleep, the woman attempted to amputate his glans penis with a pair of shears. In her excitement, she bungled the operation and the victim awoke in time to prevent its completion. A wound about 3-4 of an inch in length was inflicted, penetrating to a depth of perhaps 1-4 inch just in front of the corona glandis. Bleeding was profuse, but it was checked by means of pressure and a small bandage applied by the patient himself.

The man consulted me about two hours later, when I inserted catgut sutures and applied a dressing of bismuth subiodide, and a narrow gauze bandage, reinforced by adhesive plaster. Healing was prompt and without resulting deformity, save during erection. Ever since the injury, which occurred twelve months ago, the glans upon the injured side fails to become thoroughly distended on erection. This condition, however, has steadily improved and at no time has interfered with coitus. Complete restoration of circulation probably will not occur.

Complete Amputation of Penis

Case 2. Referred to me by the late Dr. H. F. Steere.* An honest, hard-working, decent Bohemian, forty years old, incurred the jealousy of his wife through what she

*Originally reported in N. Y. Medical Journal, Feb. 3 1912.

chose to believe was his indifference due to attentions to other women. So far as the author was able to determine, the woman was abnormally developed sexually and the "indifference" of the unfortunate victim of her jealousy and vindictiveness was owing merely to the physical fatigue incidental to his occupation, which was that of a laborer.

About 3 o'clock on the night of October 15, 1911, while the man was soundly sleeping, the wife procured a razor and completely amputated his penis, about an inch from the pubic symphysis. The hemorrhage was, of course, very profuse, and, as Doctor Steere, who was called, did not arrive on the scene before about forty minutes, he found the patient in semisyncope and almost exsanguinated. The amputated organ was found hanging by a narrow strip of integument.

After severing the skin and removing the injured member, Doctor Steere trimmed the stump, leaving the urethra longer than the stump. He then split the "cuff" of the urethra and stitched it partly over the stump, to form a pseudomeatus. A small, soft rubber catheter (No 17 F.) was left in the bladder. Healing was prompt, and the author was privileged to exhibit the case at his clinic, three weeks later.

It would seem that the foregoing victim of jealousy and revenge had experienced about all the trouble that was "coming to him," but it remained for an accident to add to his quota of misery. Several days after his admission to the hospital, the catheter which had been left in the bladder "turned up missing." There was much argument as to

what had become of it. Doctor Steere could get no definite information, but, being suspicious that the instrument had been permitted to become lost in the bladder, kept the case under careful surveillance. A severe cystitis, and ammoniacal urine developing, the patient was brought to the author for examination.

By cystoscopic examination, the catheter was located at the base of the bladder. It was curled upon itself several times, the distal portion extending up toward the fundus some 2 or 3 inches. The texture of the catheter could not be seen, on account of the incrustation of the instrument with urinary salts and mucopus. The cystoscope was withdrawn and a lithotrite introduced. With this the catheter was grasped at the second attempt and with some little difficulty, withdrawn from the urethra. Then, just as the beak of the lithotrite with the catheter in its jaws appeared at the meatus, the catheter slipped from the grasp of the instrument and was lost in the urethra; after a little effort, it was caught and withdrawn with an alligator forceps.

There was considerable hemorrhage, mainly from the contracted pseudomeatus, which was torn a little by the passage of the lithotrite and the extraction of the catheter. The hemorrhage was readily controlled by adrenalin. Since the extraction of the catheter, this most interesting case has been doing well. The author of this paper, in two previous cases of retained catheter drainage, similarly extracted a lost catheter from the bladder.

25 E. Washington St.

Studies in Dementia Præcox

Public Education in Regard to Dementia Præcox

By BAYARD HOLMES, M. D., Chicago, Illinois

EDITORIAL NOTE.—Doctor Holmes' *Studies in Dementia Præcox* have aroused much interest among physicians and public-spirited persons, both in this country and abroad, and we take pleasure in being able to publish the following communication on the same subject.

THE name dementia præcox for the insanity of youth is now coming into general use and the condition itself is becoming recognized in wider circles. So far as this malady is concerned, it must be said that it carries with it as absolutely unfavorable a prognosis as did pulmonary tuberculosis fifty years ago. Just as fifty years ago tuberculosis was considered inherited and transmissible, so now dementia præcox is considered inherited and transmissible. In opposition to this view, the

public, by all means, should be taught in season and out of season, that the origin the etiology, and the *vis morbi* of dementia are unknown, and that the hereditary factor has, absolutely, not been established. Because tuberculosis "runs in families," no one understanding its etiology would call it a hereditary and transmissible disease. It would save much confusion if the public could be made to understand that the etiology of dementia præcox is unknown; that there is no more

evidence of its hereditary nature than there was of the hereditary origin of tuberculosis before the discovery of the tubercle bacillus.

The second fallacy which causes the friends of the insane much unnecessary confusion and grief is, the belief in the inscrutable nature and the irremediable character of this condition. When a parent finds one of his children stricken with a bone disease or some deficiency of assimilation, of circulation or of excretion, he proceeds to secure advice and assistance, without damning the reputation of his whole family, including his ancestors and his descendants. Hospitals are open and physicians and surgeons are ready with curative and remedial assistance; and in the worst cases sympathy and consolation are offered.

Not so in the case of dementia præcox, for, this disease, or condition, is looked upon as "self-inflicted," "hereditary," and "a public stigma of a degenerate and corrupt ancestry." It is thought to be without remedy in purgatory or redemption in eternity, a damning nemesis of obscure but ominous stirpigenous origin. This presumption of dementia præcox being a disease from which there is no recovery, which is incurable, nonameliorable, hereditarily transmissible, the stigma of degeneracy, arrests all effort at research for the solution of the problem, disparages all undertakings of a remedial or re-educational nature and all adventures for cure.

Some victims of dementia præcox get well. There are many others that experience partial recovery, so that they go home and live, if not normal, at least endurable lives with their anxious, confused or confounded families and neighbors. Among primitive peoples, these partially recovered precocious-dementia patients often were thought to have been near God, and thereupon charged with some sacred function. By us, these persons are called simple-minded, foolish or demented, and many of them, on the dissolution of the family, at the death of devoted parents or brethren, become mere neighborhood tramps. They are then subject to the unreasoning caprices or unthinking cruelty of the community. In the cities, their position is even worse, for they drop to the lowest strata of city-life and are made tools or drudges for the dissolute and the evil.

The Inhumanity of Unsexing

Another very serious burden which both the insane and the friends of the insane have had to bear has resulted from misinformation and shortsighted or bigoted reasoning. A pseudoscience has sprung up, called eugenics.

Its principal promoters are childless females and overendowed and overpaid social therapeutists. Their great "cureall" is, suppression of procreation. They would legally spay and castrate every criminal, every imbecile, every idiot, and every insane person, even every dementia-præcox patient, despite the fact that these very individuals are notoriously sterile, as a result of their condition. In many states today, legalized desexualizing, or "sterilization," is statutory.

Consider, please, for a moment the fear of the clutches of the law, which the anxious adolescent holds, beginning with ominous legal commitment and having such a sharp claw, as spaying and castration, unconcealed. It seems strange, indeed, that our legislatures can be carried away by the manicured, silk-stockinged, and endowed eugenists to such legislative atrocities as the sterilization of the dementia-præcox victims, already too thoroughly sterilized by the inevitable process of the disease.

The sterilization-laws delay hospital treatment, they make the name of state-hospital feared, they add to the frenzied fear and suffering of the patient on and after commitment, and to the agony and distress of the friends of the insane.

Forcible Restraint Should be Abolished

Ostentatious restraint is another cause of unnecessary agony and fear to the patients and the public. These restraints are needlessly damaging to the patients and should be legally removed and inhibited. When Dr. George Zeller removed nearly forty-thousand-dollars' worth of window-bars, iron gratings, and other material restraints from the Peoria State Hospital buildings, he piled them up as a perpetual monument to progress in the humane and rational treatment of the insane.

But all the hospitals in the state are not yet stripped of their prisonlike features, nor are the keepers of the insane agreed upon non-restraint, either in theory or in practice. Hospitals for the insane are, today, under construction, with expensive and ostentatious methods of restraint build into every architectural feature. These restraints terrify, they are frightful, and disheartening. Moreover, they are unnecessary and mitigate against recovery. They bring the service into unpleasant relations with the public and detract from its purpose and its usefulness.

How to Secure Removal of Forcible Restraints

One of the first steps in the removal of restraint, and one which stands only a step

below "research for cure," in its importunity before the board of administrations is the classification of patients and the separation of the different classes into institutions adapted especially for each class. Administratively, it is a simple problem to take care of the ten thousand insane in one way and with one sort of plant and equipment, compared with taking care of ten groups of one thousand members each, in ten quite different outfits in equipment and faculty.

Yet, who will deny that the syphilitic insane are numerous enough, their disease peculiar enough, the methods of treatment technical and special enough to demand of an efficient administration a specially constructed, equipped, and manned hospital for their cure. It would be cheaper and better, and it would promise infinitely more recoveries than the present system.

The same thing may be said of the senile cases. What has an old man, or old woman done that the natural activities of labor, service, and civil and family usefulness should at last bring them before a court to be declared insane and sent to the "state hospital," in company with the syphilitic, the morphine-fiend, the alcoholic maniac, and the common drunk? The aged insane need an entirely different service, an entirely different plant and equipment for that service, than that required for the general paretic or for the alcoholic.

Modern, Humane, Care of the Demented

A large part of the chronic insane, mostly cases of arrested or partly recovered dementia præcox, would be far better off in a colony than confined in soul-destroying wards.

In Europe, colonies for the care of the harmless insane have long been in successful operation. At the beginning of the present war, there were three in Holland, two in Germany, two in France, and two in Belgium. All of these colonies were based upon the experience of the colony at Gheel, Belgium, where for six centuries the insane have been taken care of in the homes of the villagers.

Since 1852, the work at Gheel has been under government control. It has a small receiving hospital, where new patients are studied and classified before they are permitted to board with one of the local families. Seldom are patients confined permanently in this hospital, beyond the three weeks for diagnosticating.

Every family at Gheel accepts patients as boarders, and a family is permitted to care for two patients. Restraint is never used.

The patients are supplied with normal occupations, normal amusements, and follow a normal routine of daily life. They come and go about the village at will, are members of its churches and musical organizations, and mingle freely with the crowds at fairs and other festivities.

In discussing the colony-system for the care of the insane, R. Cunyngham Brown said, in 1908, that, wherever and however initiated, it has invariably been found to be, not only a relief to congested asylums, *but in itself is a valuable therapeutic aid.*" With particular reference to Gheel, Alice Isaacson wrote, in 1912: "As to the results of the system, it is stated by the authorities that the general health of the patients is excellent; during the past few years, the death rate has averaged about 4 percent; fatal accidents, from whatever cause, are rare; while, *with regard to recoveries, these, at least since 1889, have been 19 percent.*"

Two noteworthy factors enter into the life of the patient at Gheel. The state furnishes him with regular medical attention from doctors who devote their entire time to the work in a given, limited, district of the village, and the considerate, understanding treatment from the family with whom he lives, that gives him a feeling of companionship rather than one of isolation. He is not herded with thousands of others and at the same time, deprived of all normal activity; rather, he is a member of a family that understands his peculiarities and, yet, insists that he do his share of work in keeping the house and garden and also insists that he live up to the best that is in him. He has the society of children and often is given the responsibility of looking after them; a responsibility that immediately teaches him self-control and brings him happiness.

These normal activities and surroundings can not be secured in an asylum. Neither can any advance toward them be made while we retain mechanical restraints and male attendants. The restraint exercised by the customary male attendant is really the most difficult to do away with. Under the system of civil service in Illinois, these organized sluggers are more powerful than is any conscientious physician who would curb their cruelties. Not long ago, it was possible in Ohio for the male nurses to secure the discharge of an efficient and conscientious physician who was at his post of duty day and night and insisted that his orders be carried out, and who saw to it that slugging of a patient was reprimanded by the superintendent.

It is perfectly practicable for all the nursing in a hospital for the insane to be done by female nurses. The success of this system at the Peoria state hospital, under Dr. George Zeller, and, more recently, at the state hospital at Mendota, Wisconsin, is unqualified. The conditions are infinitely better, the patients are happier, and atrocities, so common under male attendants and guards, are unknown. The substitution of female for male nurses not only means the removal of ostentatious restraint, but it means the substitution of usefulness, helpfulness, and cheer in place of the occasion to commit vindictive, frightful and cruel acts.

However, there will come no change in our antiquated system of segregating custody, unless the people, the thinkers, the voters, and the newspapers insistently demand it. America is the most conservative country in the world, and before the great war was the most retarded in its care and study of the insane.

These are the immediate demands which our people and the friends of the insane should make:

1. The institution of liberal, vigorous, intense, and active research into the causes of the insanities, the possibilities of cure and of prevention.

2. The classification of patients and their treatment under conditions best suited to their cure or their comfort, in which the scheme of the colony-treatment like that of Gheel, should not be omitted.

3. The raising-up of the old-time asylums, now called state hospitals, into hospitals for cure, with the exclusion of male nurses and ostentatious restraint.

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Acute Epidemic Poliomyelitis

A Contact-Infection

By PHILIP A. E. SHEPPARD, M. D., Boston, Massachusetts

EDITORIAL NOTE.—*Doctor Sheppard, who contributes an unusually interesting paper on the subject of infantile paralysis, has had a wide experience in this disease, having been engaged as investigator in behalf of the Massachusetts State Board of Health, during the epidemic of 1910. His conclusions on the direct communicability of the disease command attention.*

In earlier papers (1, 2), certain facts were advanced and groups of cases elaborated which indicated the important probability that in a large number of cases personal contact furnished the means of conveying the infection of acute anterior poliomyelitis. It has invariably been my experience to find that in a number of families where more than one case developed there was a lapse of time sufficiently long between the early and the later cases to provide for an incubation-period—which, to my mind, is an argument in favor of the contagiousness of this infection.

The following smaller groups are now submitted in amplification of this earlier work, and, though brief, not only are they interesting, but instructive, as furnishing further evidence calculated to shed an added ray of light upon this baffling problem—more particularly upon the manner, means or point of contact. At all events, they possibly may serve to emphasize the probable contagiousness of this infection.

Group I. —Three Cases

Case 1. E. B., 22 months old on the 13th of August, was seized with fever, gastro-

enteritis and vomiting at a summer-resort in Maine. She was attended by Dr. X., of Calais, who suspended his diagnosis for a week, during which time he was in attendance on a child from Massachusetts then visiting Milltown, Maine, situated 10 miles from the town. This (Case 2) was a case of infantile paralysis, diagnosed so by Dr. X. and others. At the end of a week's visits on E. B., Dr. X. pronounced her case one of infantile paralysis. Her paralysis came on suddenly, after he had been in attendance a week.

The family of E. B. returned to Massachusetts on October 13 and shortly after this the child received treatment at the hands of the Reverend Y. at his church, where psycho-therapeutic clinics are held. She had 9 such treatments, these consisting in part in massage and manipulation by the Reverend Y.

Case 3. On December 30, M. E. R., 10-month infant daughter of the Reverend Y. had her onset of fever, with gastroenteritis, eventuating in paralysis of all four extremities and of the soft palate; it had been observed though, that for a week or so past she had been refusing either to stand or walk.

The Reverend Y. at this time was treating Case 1 at his church-clinic, but, upon the diagnosis of his child's sickness being established, he discontinued treating the patient. M. E. R. finally recovered in all four extremities; however, there remained a residual paralysis of the soft palate, which caused a persistent reflex cough, because of the prolapsed uvula.

Periodic spasmodic fits of coughing that induced nausea and vomiting threatened seriously to impair the child's nutrition. As a remedial surgical measure, I removed the major portion of the uvula (under cocaine, 10-percent solution) in such a fashion as to leave the cut surface posteriorly, so that in swallowing solid foods no irritation of the raw surface occurred. The patient made a complete and uneventful recovery. This child is now a hale, hearty and robust youngster.

This group is interesting as showing the probable role of suspected carriers in third persons, doctor and clergyman, who themselves manifest no clinical features of the infection.

Group II.—Two Cases

Case 1. E. A., 19 years, on September 11 was seized with fever, gastroenteritis and vomiting. Paralysis appeared on September 13. During his sickness, which assumed a typhoidal aspect, he was taken care of a good deal by his younger sister (Case 2), L. E. A., who, on September 20, was seized with precisely similar symptoms of fever, gastroenteritis, and so on; however, although all of the symptoms were precisely as those in her brother's case, no distinct paralysis occurred. There was, however, pain and tenderness in the right shoulder, also a coarse tremor of the right hand, which lasted for a few days after the acute attack had subsided.

These cases were closely observed by Doctor X., of Dorchester, in which town they occurred. The Doctor probably would not have connected these cases had they not been so precisely similar and had he not previously heard that there was an abortive type of acute epidemic poliomyelitis.

That this border-line, or abortive, case developed after direct contact with an acute paralytic case, suggests the bare possibility that the virus may vent more or less of its paralyzing qualities on a given case, which may or may not render it capable of producing thereafter only the general acute infectious process, but without the paralysis. I offer this observation, since I have seen so many instances where "abortive" attacks have

developed after exposure to frank paralytic cases; and, further, because I believe it has yet to be shown that the strain of the virus specific for human beings becomes more virulent after successive implantations. These abortive contact-cases either are to be accounted for by this theory, considering our present state of knowledge, or it must be shown that some individuals have a high index of resistance against this infection, or some natural immunity about which we know little or nothing at present. This seems to be opposed to the laboratory findings thus far, which, I think tend to show that the virus first taken from humans becomes more virulent and paralyzing upon successive inoculations in monkeys and as it becomes more specific for these animals.

Group III.—Two Cases

Case 1. On October 9, C. C., 7 1-2 years, is reported to have had her onset of fever, gastroenteritis, and vomiting, and on October 17 her paralysis appeared, which persists in passing into chronicity.

Case 2. B. C. visited C. C. on the first day of her sickness (Oct. 9) and stayed playing with her and her toys for five or ten minutes. On the following Sunday (a week later) her mother says that the child began to sicken. On October 17, the doctor says that fever, gastroenteritis, and vomiting set in and that the paralysis appeared on October 20. This ended in complete recovery.

The families are intimate neighbors in a, comparatively speaking, wholesome section of the suburbs of Boston, though in close proximity to the Neponset River.

This case developing after direct contact with an acute paralytic case during its incubating period and later completely recovering, bears somewhat positively upon my deduction (see Group II) that the virus seems to become attenuated by repeated transfers. Still, this may yet be proved to be merely a striking coincidence; nevertheless, I offer the data, as interesting and suggestive, for what they may be worth.

Group IV.—Three Cases

Case I. On July 24, H. B., 7 years old, was reported to have had her onset of fever, gastroenteritis, vomiting, and so on, and the appearance of her paralysis on July 27, three days later, upon which day she died. She lived near a beach in Boston and had been swimming daily at this beach.

Case 2. W. H., 4 1-2 years old, had his onset of fever, gastroenteritis, and vomiting

on July 25, and his paralysis appeared the next day. He was constantly with the first patient of this group of cases, bathing and playing with her, out of doors and in her home, before and during the early stage of her acute attack.

Case 3. R. H., infant brother of W. H., was in intimate and constant contact with him during the febrile stage of his attack, and, a week later, August 1, was taken with fever, paralysis appearing two days later. Acute paralytic attacks developed after direct contact with other acute cases.

Observe that the patient in Case 1 died during the acute paralytic stage of her attack; that the second patient lives, with both lower limbs paralyzed, and that the third has completely recovered. This adds to the facts already adduced as tending to a declining virulence of the virus after successive implantations from case to case and they are suggestive, to say the least.

Would it be too wild to hope that the alarming disease which the masses so much dread today will, in time and by repeated transfers from case to case, entirely wear out the paralyzing end of its consequences; so that we shall be left with merely an acute infectious process, with only now and then a motor involvement occurring?

Group V.—Two Cases

Case 1. W. H., 22 years old, on August 11, had his onset of fever, gastroenteritis, and so on, and became paralyzed three days later. His physical condition was good, except for pain (described by him as a "dead ache") in the lumbar and dorsal regions felt ten days before the onset of the febrile attack. Doctor Y. was treating this patient for "gastro-intestinal upset." Then, during the first week of September, his mother, who nursed him, noticing a coarse tremor, hastened to report this new development to the Doctor. On the way to Doctor Y.'s office, she visited for half an hour at Mrs. K.'s house, in the same village, and while there caressed and treated the head of E. K. (Case 2). Almost two weeks later, on the 21st of September, E. K. was seized with fever, pain and tenderness, gastroenteritis, and so on, and paralysis appeared the following day, September 22.

Here we have an instance of probable contagion by a third person who was healthy, but previously had been in intimate and constant contact with an acute case.

Group VI.—Three Cases

Case 1. On July 24, W. W., 1 3-4 years old, had an onset of the acute attack and on

July 25 developed paralysis, with the usual accompaniment of fever, pain, tenderness and gastroenteritis.

Case 2. On August 2, S. W. had an onset of fever, gastroenteritis, and so on, and the next day Aug. 3, her paralysis appeared. She was constantly and intimately in contact with her sick brother.

Case 3. On August 11, J. B. had his onset of fever, gastroenteritis, and so on, and on August 13 he was totally paralyzed. He died on August 17.

This last patient had previously lived in the same tenement block with W. W. and S. W. (Cases 1 and 2), from which district the family had removed to another neighborhood June 2 (i. e., previous to the onset of the disease in Cases 1 and 2), and since the date of moving, J. B., had not visited the district nor had there been any direct contact after June 2. However, months before the W. children (Cases 1 and 2) had the infection, there had been intimate contact between these children and others on the street. The mother of J. B. (Case 3) had visited in the neighborhood, in the same tenement block where the family of W. W. and S. W. (Cases 1 and 2) lived, and between June and August had met the two paralyzed children on the street.

Here is the possibility of direct contact-infection in Cases 1 and 2 (children in the same family) and, in Case 3, of possible direct, and indirect contact-infection transmitted by a third healthy person.

To reiterate, the possibilities in this group are: (a) Direct contact in Cases 1 and 2 (children in the same family). (b) Direct contact between Cases 1, 2, and 3 playing on the street together. (c) Indirect contact inasmuch as the mother may have carried the infection from Cases 1 and 2 in one neighborhood to her own child (Case 3) in another neighborhood.

If in Case 3 the disease was contracted from Cases 1 and 2, then the incubation-period must have been more lengthy than is observed usually; it is within the region of the possible, however, that an infection contracted directly in Case 3 may have been reinforced by a further infection conveyed to the patient indirectly by his mother.

Group VII.—Three Cases

Case 1. On July 23, N. M., 5 years old, had his onset of fever, gastroenteritis, vomiting, and so on. Six days later, he was paralyzed.

Case 2. On August 24, R. R., 2 1-2 years old, had his onset of fever, gastroenteritis,

vomiting, and so on, and two days later was paralyzed.

Case 3. On August 30, P. A., 3 3-4 years old, had his onset of fever, gastroenteritis, vomiting, and so on, and three days later was paralyzed.

These three boys were, each, one of two children in three different families, the other child in each family being a girl. The boys played together, dug in the sand together, attended Sunday school together, in which school their respective fathers were teachers. They visited each other's houses and were very intimate.

These instances of direct contact-infection from other acute cases are peculiar, in that no further cases developed at the time of my investigation, though the setting would warrant our expecting an alarming development, involving their respective sisters; but this did not occur, so far as I have learned.

Group VIII.—Two Cases

Case 1. H. C., 9 1-2 years old, on August 2, had her onset of fever, gastroenteritis, and so on. Paralysis appeared two days later. It was observed that on July 28, when apparently she was perfectly well, her writing was unusually irregular and indicated that her pen was not under proper control. This is interesting, as indicating that the control of the muscles of the right arm, which was the member most severely affected, was impaired several days before the advent of the febrile stage, indeed, before the disease showed itself at all clinically.

During her sickness and confinement at home, her younger brother, J. C., who was her boon-companion, was constantly with her.

Case 2. J. C., 4 1-2 years old, was seized with fever, gastroenteritis, vomiting, anorexia, and so on, on August 5. Paralysis appeared three days later. Two or three days before the paralysis developed, he showed signs of cortical irritation, and it was thought for a time to be, possibly, an after-effect of a head injury of three weeks previously, when he

fell six feet onto a wooden floor. The paralysis in his case affected the trunk-muscles, so that he was unable for three weeks to rise up from a prone position. The persistent twitching of his limbs, particularly in sleep, for the four or five days of the febrile stage indicated irritation of the cerebral cortex.

Here was direct and intimate contact during the prodromal stage of the infection, complicated by the effects of a fall and injury to the head; which may account for motor difficulty prior to the febrile attack.

Group IX.—Three Children in One Family

Case 1. M. C. N., 7 years old. Case 2. J. E. N., 9 years old. Case 3. W. D. N., 5 years old.

Case 1. The onset of fever, gastroenteritis, and vomiting appeared on August 8, the Landry's type of the disease developed, which terminated in death a few days later, with respiratory paralysis. Case 2, a brother of M. C. N., was her constant playfellow and had his onset of fever, gastroenteritis, and vomiting eight days later, his paralysis appearing on August 18, and this involved only his throat-muscles.

Case 3. The onset of fever, gastroenteritis, and so on, occurred on August 16. The paralysis, as in Case 2, appeared on August 18, and affected the muscles of the left cervical region.

Case 1 was not reported at the time of death nor is any source of infection known in this case; but, in the light of what later occurred in the brothers, who each developed precisely similar symptoms and paralysis, the cause of death of Case 1 was reported as having been acute epidemic poliomyelitis.

These cases in one family, with one death, where the contact was direct, intimate, and constant, point strongly to the contagious nature of the infection; also, the deduction offered in Groups 2, 3, 4, and so on, as to the decreasing strength of the virus upon successive transfers is again exemplified.

[To be continued]

Acute Anterior Poliomyelitis

By NATHANIEL H. SCHAFFNER, C. B., M. D.,

THIS disease has been in existence for centuries, in epidemic form, being classed with other forms of paralysis. In 1840, von Heine, after studying the affection carefully, separated it from other forms of paralysis. In 1870, Medin discovered its

widespread epidemic appearance in different sections of the country, at which time many experts made a special study of this form of paralysis. Epidemics during the summer of 1894 have been described by Doctor Caverly, of Rutland, Vermont. He then reported 126

cases occurring in Otter Creek Valley, a limestone region of Vermont. At the same period, domestic animals, such as horses, dogs, and poultry were reported to be affected by some paralytic disease; this fact still further supporting the idea of its infectious origin.

The incidence of this disease has increased in all parts of Europe, and in Sweden, Norway, and parts of Austria it has assumed epidemic proportions. In the past twelve years, serious outbreaks have occurred throughout the United States and Canada. During 1907-8, there were about 2000 cases, with a mortality of 6 or 7 percent, while in 1910 there were reported throughout the United States, about 8000 to 9000 cases.

In this present epidemic prevailing in New York City, there have been over 250 deaths, the rest of the victims being crippled. This epidemic in New York City is known to be the most extensive that ever occurred in one city. Many cases have been reported in Illinois, but they are regarded as endemic. In 1914, there were reported 54 isolated cases in Chicago, and in 1915 there were 31 cases reported. The epidemics have been chiefly confined to the northern states, but these have been serious outbreaks.

Flexner and Lewis lately have demonstrated the infectious germs contained in the discharges; these had not, until recently, been detected by means of the microscope. This virus is difficult to cultivate outside the body.

The Etiology

Acute anterior poliomyelitis is one of the most common diseases affecting infants and children, and it occurs most commonly during the first three years of life. It is rare in early infancy and after the sixth year. It occurs in adults as well as in children, but not as frequently, and then it usually is diagnosed as a form of neuritis. It is epidemic mostly during the warm weather, attacking healthy as well as nonhealthy children occurring equally among the rich and poor. It is known to complicate or to follow the acute contagious diseases, such as scarlet-fever, measles, and even typhoid fever.

The mode of its onset is sudden and resembles that of the acute infectious diseases, and this leads us to the belief that the specific etiology is microbic in nature. The virus continues for some time in the secretions of the nose and throat in persons who have fully recovered from this disease, and may, thus, convey this disease to others, even after a long period of time. Evidently it may be

maintained that the transmission of this disease is effected by means of kissing, coughing and sneezing, the two latter throwing the virus into the air by which it is carried directly to the nose and throat of other individuals. Other persons, such as the parents, may transmit this disease, although they have never suffered from it but have the virus present in the nose and throat. These are known as virus-carriers. Some of the lower animals are carriers of the virus. Flies and biting insects (mosquitoes, fleas, etc.) have proven to be carriers of the virus and transmitters of it.

The Anatomic Phases

The characteristic feature in this palsy is that it affects the motor cells of the anterior horns of the spinal cord. The interstitial and parenchymatous tissues of the spinal cord show a marked degeneration, an extensive atrophy and obliteration of the cellular tissue at the height of the disease.

The virus is conveyed by the circulation; the gray matter of the anterior horns has a rich blood supply, whereby the virus can be conveyed. So great is the toxicity of the virus, that the lesion extends, in many cases, through the entire course of the motor-nerve fibers to the muscles, and may even involve the white matter of the spinal cord.

The ganglionic cells are enlarged, granular, and show cloudy swellings; the cells may be vacuolated and will not take the stain very readily. The cellular tissue becomes very much distorted and suffers complete degeneration, finally disappearing entirely.

A degenerated nerve may regenerate into its normal state, but when once its nerve cell is destroyed, it will never recover. This is the sad consequence of this disease, which deprives the extremities of their power to move, thus causing a useless, hanging member. The gray matter of the spinal cord presents a degenerated, sclerotic condition.

The histologic sheath covering the medullated nerves becomes distorted and destroyed. A neuroglial hyperplasia occurs in the affected areas; in the early stages of this disease the blood-vessels of the anterior horns of the gray matter are distended, and the perivascular lymph spaces present a conglomeration of round cells and lymphocytes, establishing infiltrated foci. The meninges of the spinal cord show small infiltrated areas, these being most marked in the lumbar and cervical regions. The infiltration follows the course of the blood-vessels. The gray matter of the spinal cord is so congested that a cross

section will show a bulging and the appearance of a red figure H.

The meninges and the gray matter of the brain are hyperemic; infiltrated foci are present, a flattening and swelling of the convolutions occur in some cases. In fatal cases, the medulla and pons show the same pathology. This process is the result of an acute inflammation, produced by the intense virulence of the infectious virus.

The lesion may be unilateral or bilateral, affecting more commonly the lumbar region

The Clinical Aspect

Clinically, there are four stages that characterize infantile paralysis; namely: the (1) onset; (2) paralysis; (3) improvement; (4) atrophy and deformity.

The onset, usually, is sudden, the symptoms ranging from a mild to a severe febrile intoxication, a high temperature (102° to 104° F.), vomiting, headache, an occasional convulsion, and, rarely, a comatose condition.

There is always pain over the trunk, but more particularly in the extremities. The pain may be aching or excruciating. This stage usually lasts from several hours to a week. It is rarely diagnosed correctly before a week or longer, because the onset of this disease resembles that of the acute infectious diseases. The symptoms may begin acutely and subside in several hours, resuming their original activity after a few days.

The second stage, that of paralysis, now begins, and the process may involve one or both legs as well as some of the trunk-muscles. The respiratory muscles may become involved. This is a sad occurrence, which may develop and prove fatal. Frequently the acute stage is wanting, a child healthy on the evening before, becomes paralyzed on the following morning, without showing prodromal symptoms; or this may occur while the child is at play, which alters the gait or the movements of an arm, depending on the location of the lesion in the gray matter of the spinal cord.

If the lesion is located in the cervical region, the symptoms will be, stiff neck, tremor and twitching of the muscles of the arms, drowsiness, delirium, sore throat, and digestive disorders. One or both arms may be paralyzed. The respiratory and abdominal muscles may also be involved.

If the lesion is both in the cervical and lumbar regions, the above symptoms are present, plus involvement of the lower extremities. The arm on one side and the leg on the opposite side are involved, or it may be the

upper and lower extremities on the same side, or all four extremities may be paralyzed.

The paralysis may be a monoplegia, hemiplegia, paraplegia or diplegia. It usually involves groups of muscles (one or more), but rarely all the groups of muscles in a limb; movement is restored in the majority of cases within a few weeks or months, leaving one or more muscles paralyzed. This completes the second stage. Statistics show that 40 percent of the paralyzes occur in one lower extremity; in both lower extremities 31 percent; in all extremities 14 percent; in one lower and one upper, usually crossed, 7 percent; in both lower and one upper, 3 percent; in one upper, 3 percent; other forms, 2 percent.

There seldom is pain and hyperesthesia over the affected muscles and their nerves in this stage. The sensibility of the limb is not impaired. The galvanic responses increase in the muscles that show permanent impairment in which the reaction of degeneration is marked.

The acute symptoms subside and deformity results in one of the lower extremities, with atrophy, shortening, coldness, and inactivity. The muscles are relaxed and the limb hangs helpless; the patient becomes crippled for life. When an upper extremity is involved, the bones of the shoulder protrude, with atrophy of their muscles, and there may even present a subluxation, resulting in a helpless hanging arm.

Diagnosis and Treatment

This condition is rarely diagnosed before actual paralysis has ensued. In territory, where the disease is epidemic, the physician can give a probable diagnosis in the acute onset, when the child complains of restlessness, pain in the extremities, irritability, vomiting, and muscular tremor and twitching.

The outcome rarely is fatal, about 5 percent die. But those that live are crippled.

It is hard to say what kind of treatment should be adopted, in fact, there is no treatment whereby a complete recovery, without any deformity, occurs. There are very few children that escape deformity. The initial stage is treated like any acute disease.

Promote elimination and relieve the symptoms by medical aid. In the second stage, the extremity should be supported and massaged twice daily. After one month, the faradic electric current should be employed, to maintain the nutrition in the muscles and prevent further atrophy from long disuse. If the muscles do not respond to the faradic current, the galvanic electric current should be substituted. This treatment should be kept up for months and years.

Nonoperative Gynecology

By WILLIAM RITTENHOUSE, M. D., Chicago, Illinois

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EDITORIAL NOTE.—*This is the fifth in the series of articles upon nonoperative gynecology which Professor Rittenhouse is contributing to this journal. This is a topic in which every general practitioner is interested; therefore we believe that every succeeding instalment of this series will be eagerly welcomed by every reader of this journal. Professor Rittenhouse will be glad to answer any questions, and we hope that the series may bring out many comments.*

[Continued from November issue, p. 911.]

Prolapsus Uteri

THERE is, perhaps, no ailment for which the doctor is oftener consulted than prolapsus of the womb. Women universally dread this condition, and, with some justice, regard it as the forerunner of general impairment of health. In large cities, where vast numbers of women are engaged in occupations that involve standing for hours at a time, this ailment is exceedingly common. If I may judge from my own practice, the department-stores furnish a larger proportion of this unhappy army of incipient invalids than is found in any other occupation.

While a large majority of the cases occurs in women who have borne children, this condition by no means is limited to them. It is met with in all conditions of life and at all ages. Fortunately, in the great majority of cases, the condition is of a mild form, merely causing discomfort and fatigue, without seriously affecting the general health. Still, if the trouble is not corrected, before long the nervous system begins to suffer and invalidism and disability may gradually supervene. Danger to life is seldom involved, except in those extreme instances where peritonitis results.

For convenience of consideration, we may divide uterine prolapsus into three degrees of severity. In the first degree of prolapsus, most writers include those cases in which the uterus has descended to the pelvic floor or not as low. In the second degree, the cervix is found in the ostium vaginæ. In the third, a part or the whole of the uterus is outside the vulva, between the thighs.

In some rare instances, a considerable degree of prolapsus may exist for years and, nevertheless, produce little or nothing in the way of symptoms. Thus, some years ago, I was called to examine a bride of seventeen for dyspareunia. I was surprised to find the uterine cervix at the ostium vaginæ and immovable, evidently having been there for years. In every other respect, the woman was the picture of health and claimed never to have been sick a day in her life.

At another time, I was called to see a woman, the mother of eight children, who had complete prolapse—the entire womb being out between the thighs. In reply to my questions, she said that she had “been wearing it there” most of the time since her last child was born, five years before. In the meantime, she had done the housework for her large family. She could easily put the viscus back herself, and sometimes it would remain within the vagina for several hours. It did not seem to have greatly affected her health. She complained of the irritation and excoriation of the skin on the thighs and on the mucous membrane of the cervix, and she also stated that she was being troubled a good deal with backache; in appearance, though, she seemed as well as most women of her age.

The Uterine Supports

To appreciate intelligently the factors involved in prolapsus uteri, we must study the means and structures by which the organ is normally supported. There is considerable difference of opinion as to the part played by the various supports of the organ. I have come to the conclusion that the uterosacral ligaments are the chief supports of the uterus, so far as prevention of prolapse is concerned, because they have little elasticity, and even a small descent would put them on the stretch. Second in importance, I should put the pelvic cellular tissue surrounding the womb and vagina. The broad and round ligaments do not seem to play a considerable part in the support, ordinarily, as the uterus would have to sink quite low in the pelvis before they would be put upon the stretch.

The part played by the vagina in affording support has been much discussed, some writers holding that its support is nil, while others regard it as very important. I am convinced that its part is far from being insignificant. The vagina is capable of giving support in two ways namely: acting as a tonically contracted tube and also by the mass of its walls. As a tube, its upper third, even when normal, is so roomy that it affords but little support, but not so with its lower portion,

where the vaginal sphincter certainly helps to prevent extreme prolapse. It seems to me that anyone who will carefully study the relaxed vagina in a case of prolapse following parturition, will be convinced that a normally contracted vagina would be of great assistance in relieving the condition.

The perineal body undoubtedly plays an important part, although an indirect one, in supporting the uterus. It supports the vagina, and this in turn is part of the uterine support. This is well illustrated in cases of complete laceration of the perineum. Rectocele and cystocele are liable to follow, and the vaginal wall drags the uterus down.

Etiology

Prolapsus, in some cases, is acquired suddenly as a consequence of lifting a heavy weight, from a fall, from railway or carriage accidents, or from any similar violence; the majority of cases, however, come on very gradually. Among the most common causes, we may mention prolonged standing, stair climbing, carrying an infant or other burdens, tenesmus due to cystitis or dysentery, straining at stools (in case of constipation), coughing, subinvolution after parturition, relaxed musculature of old age, and many minor causes.

Symptoms

The first symptoms usually observed by the patient are backache, a sense of heaviness in the pelvis, a feeling, as they often express it, "as if everything were going to drop out." Gradually such women succumb to a feeling of utter weariness and disinclination for exertion, and lose all ambition. There may be headache usually felt at the top of the head. Extreme nervousness may be a feature and occasionally melancholia.

Where the prolapsus is sudden, as a result of violence, the symptoms are more acute. There may be shock, disability, great pain, and even peritonitis.

Diagnosis

The diagnosis presents no difficulty. The simplest local examination reveals the exact condition; indeed, the patient herself mostly already has made the diagnosis before presenting herself. There is one point, however, that the examiner should never forget, namely, that the amount of misplacement can not always be correctly gaged with the patient lying on her back on the examining-table.

The true condition can be more accurately determined by examining with the patient

standing on her feet; the best way being to have her place one foot upon some object high enough to bring the thigh into a horizontal position. Where the uterus has become fixed, this, of course, will make no difference; when it is movable, however, it makes considerable difference. Thus, I have had cases in which the patient's description of her symptoms led me to suspect prolapsus, but examination on the table showed the uterus in nearly normal position; examination in the upright position, however, revealed the cervix descended to the ostium vaginae. These cases generally are not of long existence.

Treatment

In discussing the treatment of this condition, it will be convenient to consider separately three classes of cases; namely: (1) those in which the uterus is freely movable and easily reduced; (2) those in which the uterus has become fixed in the false position, and (3) those in which the uterus is outside the vulva—complete procidentia.

Where the uterus is freely movable, the problem is simple, at least so far as the indication is concerned. All we have to do is, to lift the womb into its proper place and *keep it there*. The latter is not always easy, or, rather, the means for accomplishing it are not always satisfactory. But, when it can be done, the relief afforded is almost magical.

For most of these cases, I prefer a well-fitting Hodge pessary. I have heard and read a great deal of sweeping condemnation of pessaries in general, nevertheless, the fact remains that no one thing has given me more satisfaction, has pleased more of my patients, and has done more to increase my office business than the good results obtained with pessaries. Scores of times have I heard a patient say, before leaving the office, after having a pessary placed, "I feel a relief and comfort such as I have not felt for weeks."

I cannot understand the failure of some doctors to get good results with pessaries, unless it is because they have not given the subject the study that it merits. When I call to mind all the pessaries that I have removed, which had been inserted by someone else, and remember how many of them were of unsuitable size and shape, how many of them were wrongly placed, how many had produced discomfort or even ulceration of the vaginal wall, it seems to me that this little contrivance has been loaded with blame that properly should rest upon the shoulders of

those who have applied and misused it. I have found pessaries that were upside down, wrong side foremost, with the top in front of the cervix instead of behind it, and some so large that the vaginal wall was stretched tense as a drumhead; I have found pessaries pressing so hard against an immovable uterus that necrosis had occurred in consequence.

I believe that the most common mistake is, to use too large an instrument. Placing a pessary upsidedown, wrong side foremost, or in front of the cervix is, of course, the work of sheer ignorance; but, a doctor may choose too large an instrument with the best of intentions, thinking that the uterus must be kept as high up as possible. This, however, is not essential. The object to be attained is *not*, to keep the uterus very high, but *to prevent it from descending very low*. And I do not know of a single textbook that emphasizes this point as it should be emphasized. As long as doctors believe that a pessary should hold the uterus as high as the normal position, or higher, so long shall we see bad results from too large pessaries.

A normal uterus moves up and down with respiration and other body movements. To force it up as far as it will go and hold it there with a rigid supporter, is, to say the least, not natural. I make it a rule to use the smallest pessary that will remain in position, and find that such a one gives more comfort than will a larger size. A uterus an inch below its normal position will not cause its owner any discomfort; it is a *further* descent that will produce symptoms. It is this further descent that the pessary should prevent.

Placing a Pessary

If examination shows the uterus to be movable and easily lifted to its normal position by the finger, there is no reason why a pessary should not be introduced at the first interview. If it can be lifted only with difficulty or not at all, then preliminary treatment is necessary before inserting a pessary. In placing this appliance, the patient may lie either on her back or in the Sims position or she may assume the knee-chest position. It often is advised to place the patient in the latter position if the uterus is difficult to lift. I am of the opinion, though, that, if the uterus goes up with so much difficulty as to make the knee-chest position necessary, it is wiser to postpone placement of the pessary until a more normal mobility has been attained by treatment. Consequently, I always adopt either the dorsal or the Sims position.

Having pushed the uterus up with the

finger, an estimate can be made of the size and shape of pessary required. This chosen, it is grasped between the index-finger and thumb by the pubic, or small, end. The arch, or large end, is then lubricated and pushed gently through the vulva in the position of least resistance—usually the oblique. As soon as the instrument is wholly within the vagina, the index-finger slips up behind it to the cervix, catches the arch and, with a sweeping movement, swings it behind the cervix. It should now be tested to make sure that everything is all right. If the vaginal walls feel tense to the finger, the instrument is too large; if it causes discomfort, it is too large or of a wrong shape. The patient should not be permitted to leave the office until she can truthfully say that she is not conscious of the presence of the appliance.

The test for position should not be forgotten, for even an experienced hand may easily get a pessary wrong side foremost. This is the test: When right side foremost, the pubic end points downward (toward the feet) and its flat side rests against the pubes, while the arch points upward (toward the head) and rests in the cul-de-sac, behind the cervix. If the instrument is wrong side forward, the lower end will rest against the pubes with its point instead of its flat side, and the pressure of the point will soon cause trouble, while the arch will point backward and toward the sacrum instead of toward the head.

If the patient be a nullipara or a virgin, the introduction of a pessary may be difficult and painful. In the case of a virgin, especially, every other means of relief should, of course, first be exhausted. When the pessary is unavoidable, slow dilatation with a speculum at several sittings will render the introduction less painful.

Where for any reason the use of the Hodge pessary is not thought advisable, very satisfactory results can often be obtained by means of a firm, cylindrical tampon of elastic lamb's wool. A bivalve-speculum is introduced, a heaping teaspoonful of powdered boric acid is placed under the cervix, the tampon is pushed in as the speculum is withdrawn, and is then examined and adjusted with finger. The boric acid will keep the tampon from becoming offensive for three or four days, after which it should be renewed. A few weeks of this treatment will often produce excellent results.

The Fixed Uterus

The immovable prolapsed uterus must first have its mobility restored by treatment

before a pessary can safely be introduced. The condition is due, not so much to adhesions, as to a rigidity of the cellular tissue surrounding the uterus and vagina, the result of inflammation. If there is much tenderness, the inflammation still is in existence and all use of force must be avoided. It is best treated by a plentiful use of glycerin tampons, alternating with frequent and prolonged hot douching. If there is no tenderness and attempts to push up the uterus cause no pain, the inflammatory condition has disappeared and some force may be used.

The patient should take the knee-chest position for five or ten minutes, to drain the circulation well out of the pelvis, then with the finger the uterus should be pushed up as far as it will go without causing pain; then the vagina should be packed with the powdered boric acid and lamb's-wool tampon. The patient is ordered to return in three days, for a repetition of this treatment. In most of these cases, half a dozen treatments will restore the mobility of the uterus enough to permit employing a pessary.

Procidencia

When the uterus protrudes wholly or partially from the vulva, success is not often attained without resort to operation, and even this frequently is disappointing. In a few cases, however, palliative treatment may afford a certain degree of relief.

The prolapsus should be reduced in the knee-chest position. An effort may then

be made to retain the organ within the body with a disc or ring pessary (doughnut shape) of either hard or soft rubber. This has the advantage that it can be removed for cleansing and replaced by the patient herself, as it can not be put in wrong. The hard rubber is the more cleanly and durable, while the soft rubber is the more pliable and compressible for introduction. But they often fail to hold up the uterus.

Whatever the form of the pessary, the patient should be instructed to return at stated intervals for examination, and she should be emphatically warned against the dangers of allowing a pessary to remain indefinitely. I have seen some horrible conditions due to a pessary remaining in place for years, until it has become imbedded in a mass of ulcerating tissue.

It is important to bear in mind the mechanics involved in the action of a Hodge pessary. In the language of physics, it is "a lever of the first kind," in which the weight is at one end, the power at the other, and the fulcrum somewhere between the two. The weight to be lifted is the uterus; the power is the passive resistance of the pubic bone; while the fulcrum is the long bend of the pessary resting against the floor and back of the pelvis. This can be verified by pressing the pubic end of the instrument in a backward direction, with the finger; it will be found in that case, that the uterus is being lifted.

[To be continued.]

Preventive Medicine and Hygiene

By BOARDMAN REED, M. D., Alhambra, California

IN reading the fascinating biography of Dr. Robert Gray, now running in *CLINICAL MEDICINE*, I have been much impressed by his eloquent defense of the fruit and vegetable diet, upon which he has chiefly depended in certain cases, by the wonders he has learned to perform with the aid of sulphide of calcium and other remedies, and also by the remarkable cures he produces with the local use of epsom salt.

His good results from ripe fruit and vegetables are less surprising to me, since I myself, although over the age of seventy-four, have gained much in weight and general tone by having confined myself, for several years now, almost entirely to fruit, vegetables, and milk. It is astonishing that so many farmers, who have an abundance of all these products, buy

largely of such not indispensable luxuries as meat and sugar at their greatly higher cost in these war-times, notwithstanding even that many of the authorities hold that the eggs, milk, and cheese produced on the farms are all-sufficient even for men doing hard labor, while much meat and sugar actually are contraindicated in many of the commoner diseases, especially in rheumatism, gout, eczema, arteriosclerosis, and all affections of the heart, arteries, and kidneys—and these troubles are especially prevalent in the United States, the mortality from the degenerative diseases of the circulation having doubled in the last thirteen years.

Many thousands of people are dying every year from preventable forms of disease, nearly as useless a slaughter as is now going

on in the war in Europe. It is enough to make all conscientious physicians turn sanitarians and hygienists.

The general practitioners who, under present conditions, fill the role of family physicians, come the nearest to occupying the position of salaried medical or hygienic advisers; still, many of them fall far short of achieving what they might, if they studied hygiene thoroughly. The one subject in which a very large number of them is deficient is dietetics, and, in consequence, the heads of families in straitened circumstances are everywhere struggling to supply their households with foods that they would be healthier without, or at least with far less of them. If the doctors would advise people to make large use of eggs, milk, and cheese for the proteid part of their food—which need never be more than one-fourth of the whole and should be considerably less for idle and for sedentary persons and especially for those suffering from the diseases mentioned—it would be better. If, in addition to such economic substitutions, whole-wheat or Graham bread were to take the place of the white bread eaten exclusively in most families, very little of the expensive flesh foods would be necessary. Moreover, if all the food were thoroughly chewed instead of bolted or washed down with coffee, tea or chocolate—all costly and usually highly sweetened compounds, which are not indispensable foodstuffs—life would be prolonged and consequently health be better. It seems unnecessary to repeat these hygienic axioms to physicians or to insist upon that other axiom that every healthy person should be required to drink a large quantity of pure water every day, and most of it at other times than at meals.

Lack of water and lack of fruit and vegetables at most of the meals, and lack of sufficient exercise are the principal causes of the almost universally prevalent constipation in this country. If the family physicians could be induced to do their full duty in instructing their patients in these respects, fewer patent medicines and less doctoring would be in vogue. In the end, perhaps, there would be

less fees for the doctors, but they would have the satisfaction of seeing far fewer uncured dyspeptic patients.

Let me close this hygienic scold with a quotation from a book on hygiene which I have just written:

A Summary of the Necessary Health Rules

1. Let both your work and play be out of doors when practicable.
2. Some outdoor exercise, including many deep breaths, every day.
3. When you must be indoors, have free ventilation.
4. Sleep every night with either the head or whole body out of doors.
5. Meat once a day only; eggs and sugar sparingly.
6. Avoid spices and all hot condiments, except as mild flavorings.
7. Eat only when hungry and less than you could.
8. Always eat slowly and chew thoroughly.
9. Never wash down your food, but drink freely *between* meals.
10. Eat much fruit, and try to evacuate after *every* meal.
11. Cleanse your mouth and teeth after meals; certainly twice a day.
12. Maintain, always, an erect posture, especially in sitting.
13. Marry early a healthy mate and lead a chaste life.
14. Avoid alcohol, tobacco, strong tea and coffee, and all poisons.
15. Avoid worry, anger, and all excesses.
16. Get seven to eight hours' sleep every night, and make up all lost sleep.
17. Be pleasant, cheerful, fond of fun and a joke, and enjoy life sensibly.

Deep breathing each day is a wise rule for man.

Daily use of the muscles is part of God's plan.

Drink daily of water, a quart at the least,

Two or three well-chewed meals, but rarely a feast.

A tub-bath or sponging each day for the skin

Eight hours' sleep at night will help you to win.

If your duties are indoors, your play should be out
In fresh air and sunshine, without the least doubt.

"I'M GLAD HE WON"

By CHARLES L. H. WAGNER

"I'm glad he won—I've tried and failed,

Perchance my turn will come again,
A better man I've never trailed."

This is the attitude of men,

Real men, who strive to gain the prize,

But lose to one whose strength proved best,

Such men are rare and envy's eyes
Are not in them made manifest.

"I'm glad he won." Can you, my friend,

Say that, when some one gains the goal
Which seemed but yours unto the end?

You risked your all, and lost the whole;

Have you that God-like attribute

Which smiles and says, "His will be done,

I've lost the race without dispute,
I'll try again—I'm glad he won."

Nihilism in the Medical Profession

By C. W. CANAN, M. D., Orkney Springs, Virginia

SEVERAL years ago, Dr. Arthur Bevan, of Chicago, made the following statement: "Drug-treatment is useless in cases of pneumonia. The medical profession, so far as medicines are concerned, can be of no assistance in the fight against this disease. The sooner the profession will acknowledge this to the public and set to work to discover some specific to save pneumonia-patients, the better for all concerned."

Only recently, a physician who stands high in the profession of our eastern cities gave forth the following: "All physicians must admit that we have no remedies that will cure pneumonia or influence its course for the better. On the other hand, we believe that many of the drugs now employed in the treatment of this disease do real harm, and often prevent nature when she would have produced a cure. Thus, the only good a physician can do in a case of pneumonia is, the moral effect of his presence."

We are absolutely at a loss to know why a physician of ordinary intelligence could or would make any such statement as this, to say nothing of men who want to be leaders and teachers of the profession.

What practical difference can anyone see between medical men of this type and Christian scientists, mental healers, and the half-dozen other similar creeds?

Physicians who Know the Value of Drugs

Had these men said that we have no absolute specific for this disease and had stopped with that, no one would be left under a wrong impression, and it would not be necessary to challenge their statements. I can truthfully say that there are thousands of general practitioners in this country today who have treated numerous cases of pneumonia and carried them to a successful termination. These men *know positively* that drugs are of benefit in curing pneumonia. Every year one has critical cases of this disease, in which the victims most certainly would have died had they not happily fallen into the hands of a competent doctor, one who knew the indications for certain remedies and used them with nothing but good effect.

The statement that "we have no specific for pneumonia" is misleading, although correct; for, it leaves the inference that we have a specific for all other diseases. This is not

true, there being no absolute specific for any disease. There is no one drug or special remedy that will meet all the indications and conditions in any disease to which humanity falls prey.

The old unscientific method of "treating the names" of diseases is largely responsible for the spread of nihilistic ideas about therapeutics. The writer has not found one nihilist among the great army of physicians who have adopted the modern scientific method of prescribing according to the actual indications present in each case and who are continually refreshing their store of knowledge of scientific therapeutics by research-work. They believe in drug-therapy, because they are, every day, getting evidence of its worth.

Drugs are as essential in the treatment of pneumonia as in any other disease, provided the doctor has learned their precise indications. The writer does not remember of seeing the good effect of medicine more beautifully demonstrated in any disease than we have in pneumonia, when the right drug has been prescribed at the proper time.

The writer does not believe that any physician who has lived up to his responsibility—by continually studying his materia medica, keeping up with the advance in pharmacy and chemistry, taking pains that his patient gets the purest and best drugs possible—ever will become a therapeutic nihilist.

With drugs of precision at our command, such as the alkaloids, a physician, it seems, is criminally negligent if he lets the life of a pneumonia-patient go out because there is no specific for that disease. We appeal to that great army of doctors who do things. These doctors will tell you that prompt and positive treatment, begun early and pushed to effect, many times will abort the disease, and always will modify its severity, in whatever case.

Some Drugs That Help

With which to do this, we have calomel, podophyllin, and the laxative salines, to clear the alimentary tract; and the sulphocarbolates to render it clinically aseptic. Aconitine, or the defervescent compound, to reduce temperature and arterial tension, and to secure free action of the skin. Or, if indicated, the pneumo-bacterins. Lobeline sulphate, to destroy toxins. Nuclein and

calcidin, to increase leukocytosis Quinine and strychnine arsenates, as tonics. Creosote carbonate, ammonium chloride, and others, for coughs. Bryonin, if there is pleuritic pain. Besides many others, if indicated.

With an array of drugs of precision like the foregoing, the doctor who says that "the medical profession, so far as medicines are concerned, can be of no assistance in the fight against this disease," most certainly has "bats in his attic"; or, if rational, does not believe his own statements.

Is it any wonder that we have so many

skeptics as to drug action among the laity when assertions like those quoted are made by men (who consider themselves at least) high up in the profession?

Condemn this nihilism when and wherever you hear it announced, for it only makes it more difficult for all physicians who are working hard to save life and relieve suffering.

There is no doctor on the face of this old earth of ours better qualified and equipped to make a successful fight with disease than is the American physician.

Blood Examinations by the General Practitioner

By A. L. BENEDICT, A. M., M. D., Buffalo, New York

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IT is just as important and just as easy for the general practitioner to make routine blood examinations as urinary analyses. The former are practicable only, if we cut loose from ideals of thoroughness, distinguishing between common conditions and methods not requiring elaborate skill, on the one hand, and refinements adapted only to one having special skill and abundance of time, on the other, appreciating that, as with urine, feces, stomach contents, and the like, certain cases will need special services.

Some excellent men have assumed the attitude that, because they cannot become expert hematologists, they will not undertake blood examinations at all, but will refer such work to specially equipped laboratories. This sounds well but, practically, it means that they will neglect the patient's interests unless he is very wealthy, or is very poor and available in a hospital-ward for an impressive report, or unless very marked symptoms present themselves.

The physician who can test even only for albumin and sugar, and who does so as a routine measure, safeguards the interests of 75 percent of his patients, so far as urinary analysis is concerned. If, in addition, he can test for indican, acetone, and diacetic acid, and make a few simple approximate quantitative estimations, his efficiency, from the humanitarian standpoint, is probably 99 percent as compared with the best laboratory in existence. True, from the standpoint of the student of metabolism, his quan-

titation of urea, by developing nitrogen-gas, and his other tests are crude and inaccurate, but, from the clinical standpoint, even so enormous an error as 10 percent is not very serious, and, in fact, most of the clinical quantitations that can be carried out in a simple laboratory are much less inaccurate. For every purpose except the establishment of metabolic standards, they are good enough; far better than methods so perfect that they are applicable only to occasional cases. No sane person would advocate the general disuse of simple urinary tests by the profession generally, merely because they are not up to scientific chemical standards. Exactly the same argument applies to blood examinations.

A few cases may be cited, analogous to familiar but, now, fortunately infrequent clinical experiences regarding neglected nephritis, diabetes, and the like.

1. Young girl, excellent general health till recently, when she became pale and weak. The plausible surgical diagnosis was made that there was some obstruction to menstruation, and some operation was done. Undoubtedly, the exact diagnosis was correct, and the operation skilfully performed, but this side of the clinical picture was unimportant, and surgical intervention under anesthesia was unwise, under the circumstances. Another physician made the tentative diagnosis of leukocythemia, using a drop of fresh blood. This was confirmed by more elaborate methods, and proper treat-

ment instituted—though, unfortunately, not with success. As recent reports on the action both of benzol and the x-rays are fairly favorable, one cannot help wishing that the condition had been discovered earlier.

2. Middle aged man seen in consultation. Mitral regurgitation and moderate reduction of gastric acid fluid. Opinion that the diagnosis was not complete, that the essence of the condition was not apparent. Request to make blood examination refused by attendant. This case also proved to be one of leukocythemia.

3. Boy having Hodgkin's disease. Blood examined as a routine test. Leukocythemia found. No practical benefit derived, but some satisfaction in finding this combination of rare diseases.

4. Elderly woman, symptoms of gallstones. Blood sample taken for routine test. Ridiculed by attendant, also routine, because previous blood samples in his cases had never shown anything interesting. In this case, besides the minute chance of discovering leukocythemia or some other essential blood disease, it was expected that the leukocytes might determine whether there was any septic condition in the gall-bladder. Instead, I was amazed to find malaria-organisms which are about as likely to be found in this region as are typhus or smallpox. There was absolutely nothing to suggest this diagnosis, but it was learned on further inquiry that the case was undoubtedly one of sleeping-car malaria, that is, one contracted during night passage through a swampy region where the anopheles is common. It was then found that the account of fever and chilly sensations, taken to suggest sepsis, corresponded with the "anticipation" of the chills in malaria. Contrast the cure accomplished in a short time by means of quinine, the active symptoms being controlled within four days, with what would have been likely to happen if this feeble elderly woman had been treated for several weeks as a sufferer from hepatic or gall-bladder disease, and then operated upon, under the belief that she had a septic gall-bladder that would not yield to medical treatment.

5. Here may be presented quite a group of cases proving to be appendicitis and other abdominal conditions of septic type. As is well known, the exact diagnosis is not always easy, or even possible, but the main point is, to determine whether surgical intervention is immediately necessary or not. The diagnosis on this point must be made promptly, and often at inconvenient times

and places. Here, the inspection of a stained smear of blood usually suffices to determine a septic leukocytosis, on the one hand, or an ominously lowgrade leukocytosis, on the other. It is, of course, more satisfactory to have a definite count of leukocytes, and, still, there are many instances in which it is sufficient to be able to say that there is a great increase of white cells and especially of the polymorphonuclears; but one's time is pressing—as, for instance, when a given train must be caught.

6. I am unable to present a case of actual error in diagnosis, except as reported in the history or in comparing my preliminary with the final diagnoses, but it is safe to say that a good many conditions go by the name of neuralgia or neuritis or rheumatism or tabetic crises which really are cases of trichinosis and in which the increase of eosinophiles in the stained specimen would immediately put us on the right diagnostic track.

7. Anemia is easily—or at least readily—diagnosed. I confess in one particular—not to mention many others not pertaining to the present discussion—not to be able to learn from experience. Every little while I come across a pale patient who may be suffering from some other condition, or who may obstinately insist upon being in good health, and who does not see the clear indication for iron, beefsteak, and other forms of hematinic medication. And, on examining his blood, I find that this is in perfectly normal condition. It is of practical value to know whether our medication in anemia is, or is not, "delivering the goods." In a great many cases, any given hematinic may fail entirely. It is just as necessary to check the results of treatment in this condition as in any other, and it can be done only by serial blood examinations.

Again, the diagnosis of anemia is not sufficient in itself. We need to know its grade, whether it is of the ordinary secondary type, or whether it presents peculiarly serious features. Classifications of anemia differ in their nomenclature, and none is perfectly satisfactory. In particular, I do not believe that there is a definite single condition that may be called pernicious anemia, but rather that this term signifies an aggregate of anemic conditions in which we fail to get at the real cause or in which, for one reason or another, therapeutic measures fail. Nevertheless, we already know something of the nature of different kinds of anemia, and can, at least, distinguish simple secondary cases that recover with the relief of etiologic factors or the improvement of general hygiene, from

those that are serious and which present peculiar types of cells.

The Simple Requisites for Making Blood Tests, and the Procedure

It is unnecessary to present a treatise on the theory of blood work. Every library contains some work on physiology and on hematology, either by itself, or as a part of general laboratory-diagnosis. Even advertising-matter contains an abundance of fairly reliable reproductions of blood appearances. This article is merely intended to supplement some standard work treating on blood. The following routine method of examining blood is recommended for its simplicity and as being within the ability and available time of almost every responsible practitioner.

The requisites for these tests are not many and relatively inexpensive; to wit: A small tin box; a package of 3-4-inch square cover-glasses, not too brittle, of good quality and not of the thinnest, but rather thinner than ordinarily used for urinary microscopy; a package of slides; pine boxes constructed to hold mounted slides; gummed labels (not necessarily printed with your name); a bottle of good blood-stain of the Wright-Jenner type; a bottle of Canada balsam thinned with xylol; a small tile or piece of thick glass; a bottle of distilled water; a pin or needle; a steel pen with one nib broken off; an old linen handkerchief; a microscope with an objective working within 2 or 3 millimeters from the slide; a book of Tallquist blotters, with color-scale; a bottle of alcohol.

In a small tin box, always carry with you a few cover-glasses wrapped in the paper and tinfoil from a cigarette-package; also the broken pen. Put the Tallquist hemoglobino-meter-book in your side pocket. Thus equipped, you are prepared to make a fairly reliable blood examination at any time and in any place.

How to proceed: Clean the patient's ear or finger-tip with alcohol, rubbing well, to remove fat and dirt. Clean the pen and 2 cover-glasses with alcohol and wipe them dry and shiny, but letting the alcohol evaporate from the pen. Now draw a fair-sized drop of blood onto one cover-glass, press the other upon it and quickly slide them apart. This should give an evenly distributed thin smear. Next, place enough blood on an inch-wide piece of Tallquist paper to color all of the paper evenly for at least an inch square, then blot off the excess. Compare this immediately, in good daylight, with the color-scale.

Start at the extremes of color and work back and forth, so that you can say, for example, "This is much less than 100 percent, much more than 30 percent, less than 90 percent, more than 50 percent. I do not know whether it is 60 percent, 70 percent or 80 percent. Yes, it certainly is more than 60 percent, it is darker than 70 percent, lighter than 80 percent—call it 75 percent.

I have tried to show just about what are the certainties and uncertainties confronting the beginner. With a little experience, unless one is partly color-blind, it is almost always possible to make a correct reading within 10 percent of the actual, as determined by some form of spectroscopy; and this suffices for practical purposes.

The slides with the dried blood-smears may be put back into the box and carried home for staining at leisure, for the smears will keep a week or more without deteriorating. Before staining, carefully examine, under a good light, both sides of the slide, to make sure that you are staining the smeared slide. This advice may sound childish, but, for the beginner, it is somewhat difficult to distinguish the smeared side. If in doubt, scratch the surface with a pin, holding the cover-glass between the eye and the light. If the pin makes a scratch, obviously it is on the blood side. Now put the cover on the tile (or piece of glass) blood-side up, and drop, or transfer with a glass-rod or pinhead, enough of the stain to cover the glass completely, but not to run over. By timing yourself and noting results, you can ascertain the optimum duration of staining for any given preparation of stain—and these vary more or less. As a rough rule, stain till the stain begins to stiffen from evaporation—about a minute. Wash off the excess, but not too thoroughly—just enough so that the glass is free from running colors. Polish the plain side of the glass, being careful not to confuse the two sides, dry over a gas jet, then mount with a drop of diluted balsam.

The slide should be freshly washed polished and dried; in fact the balsam runs better if the slide is heated. If bubbles are present they can be driven out by gentle pressure on the cover with a pin, holding so that the edge of the slide and cover are directly upward. If not enough balsam has been applied add a drop at the edge of the cover and warm, when it will enter by capillarity. If too much is present, wipe it off carefully with a bit of blotting paper, as balsam will smear an objective and stick the slides together or they will stick to anything they happen to come

in contact with. Label with name, date, and hemoglobin percentage, and add the differential count or any other facts of value.

The beginner (and sometimes one with considerable experience but not much skill) often will fail to make a good smear and stain. Usually several good fields will be found. Disregard overstained, and understained fields, those near the margin where, for some reason, disproportionate numbers of leukocytes often collect, those where the corpuscles are heaped up, those in which remnants of stain or dirt are abundant. In fact, for all sorts of microscopic work, it is well for the average worker to realize that he cannot make every object in every field recognizable, and that, if he attempts to classify objects brought to view imperfectly, he will reach incorrect conclusions. In fact, I am somewhat skeptic as to whether even the most expert can successfully carry out the idea of classifying every cell or urinary cast or other element. For example:

Some years ago, hearing a report on an interesting case of eosinophilia, I secured mounts made at the same time and by the same person, and found an average of only about half the percentage of eosinophiles. It may seem presumptuous to make such a comparison, but an eosinophile is the cell least likely to be missed and almost impossible to mistake for anything else, while a brightly stained neutrophile occasionally may be mistaken for an eosinophile; also, in a poorly stained field, various leukocytes may be missed, but not eosinophiles. The difference in results was undoubtedly due to my deliberate omission of poor fields. If the results had been reversed, the logical conclusion would have been that my counts were inaccurate.

In passing from study of text and plates to practical work, it should be remembered that the results of various stains, even of different samples of the same formula or different mounts made by different persons, or by the

same, but not of high technical skill, vary considerably. The method of treating with alcohol-ether and then staining separately with eosin and methylene-blue and the various modifications of the Wright-Jenner stain that do not require this preliminary treatment, ought to give marked color contrasts, even with stains made of dyes of inferior quality and with inexpert manipulation. The formerly orthodox method of preliminary treatment with heat and use of triple stain is very likely to give feeble tints. For example, I have such a stain, made at the Massachusetts General Hospital, which never could be made to give anything like the color contrasts of plates in textbooks and, on complaining, I was assured that it was up to the usual standards.

The important qualifications of a stain are not its actual tints, but the distinct contrast of red cells, red cell nuclei (not very commonly found), the protoplasm and nuclei of ordinary polymorphonuclear white cells, the eosinophile bodies, and the protoplasm and nuclei of large lymphocytes, the small ones often showing nothing but the nucleus unless the smearing and staining are quite perfect, when a small margin of protoplasm is seen. Neutrophile granules ought to be apparent, but sometimes are not, even with methods that are practically efficient. I must confess never to have developed the technical skill to distinguish sharply in every instance, that is, in regard to every cell, between myelocytes and normal lymphocytes. I have seen reports of extreme variations in myelocyte counts, within short periods, that make me suspect that others have the same trouble and possibly do not recognize the fact. The beginner is very liable to mistake particles of stain or dirt, especially coal soot, for nuclei of red cells, or for malaria-parasites. In fact, as for all branches of clinical microscopy, it is wise to be skeptic as to unusual occurrences, and not to base a diagnosis on a single object.

LAUGHTER

LAUGHTER is the adipose tissue which softens man's point of contact with a hard world. It is his spontaneous concurrence with God's original verdict concerning the goodness of the earth, and is his insouciant challenge to fate. It does not deny the fact of the inherent pathos of life, nor does it close its eyes to the presence of the wrong.—Laughter is dynamic common sense. It is kinetic faith, hope and charity. In it, as in the poet's flower from the crannied wall, lies implicit all the wisdom of the sages and the seers.—*John E. Rosser.*

An Old Doctor's Life Story

An Autobiography

By ROBERT GRAY, M. D., Pichucalco, Mexico

[Continued from September issue, page 764.]

IN preventive combat against smallpox, besides vaccination, I used the calcium sulphide and macrotoid in persons who had been exposed, and not one of them developed the disease, and there was not a single case on either of the American plantations under my system of medication, while, a few leagues away, as high as 60 percent of the first victims of the attack died where there was no systematic vaccination or preventive medication. I did not have to treat a single case of smallpox in that epidemic that was so extensive and deadly; for the reason that not one person in our plantations had been attacked, either in my field or in that of Doctor Maldenado.

This feature of improved medication is high above and far beyond any rational estimation of price: the prevention and abortion of deadly infectious disease in the very presence and face of its most virulent epidemic course of havoc. In all humility, I think I may be pardoned for saying that, had I never done any other service to imperiled and suffering humanity, the life saved on those big American plantations alone should give me a fair score of professional credit.

And, in this beneficent work, Doctor Maldenado was my proselyte to the faith in this improved therapy. True, he at first ridiculed it; still, he was too bright a man not to admit its merits after observing for a while the incredible service it rendered me. My professional relations with Doctor Maldenado, who is a graduate of the University of Pennsylvania, are amiable and strong, although we never meet save in cases of extreme gravity, for, our offices are twenty-five miles apart and the outer limits of our fields of practice very much further. I may add here that, in 1913, he and his interesting family were exposed for a whole day and night to the fury of the most bloody battle of these revolutions fought in this department. The rebels took refuge in the house in which the family lived; however, strange to relate, not one of them got hurt. The same band of rebels was within fifty feet of my house, in another combat, a few days before the battle at the house of Doctor Maldenado. They pressed him into service as their sur-

geon for the nonce, their people getting hurt by scores.

The Active Principles in Aborting Pneumonia and Typhoid Fever

The abortion of pneumonia and typhoid fever, at their inception, is far simpler and easier than their cure, after development. I thus asseverate under the authority of years and years of practice, in appalling epidemics visiting us a number of times. And the active principles enabled me to render such meritorious service to people in distressing peril as other medication, under any known method of application, would not have attained. Their purity and concentrated strength, in bulk so diminutive as not to provoke a rebellious stomach the same as the great nauseating spoon was ever wont to do—there being nothing repulsive about the little clean, tasteless tablets or granules in their dressing of sugar of milk—is one reason why they have so positively discounted every medicinal rival and render preventive and abortive medication an established clinical fact that no specious skepticism can criticize out of triumphant conquests over the deadly enemies of man.

The Story of Chula Rosa Carmen

Strange experiences are not as extraordinary, in a career as eventful as mine has been, as they might seem in a more commonplace life.

One day I was called to a place, fifty leagues distant from my office, so urgently that I was importuned not to stop either to sleep or to eat, as meals would be handed me along the wayside and relays of fresh horses, ready saddled, were waiting every eight leagues, which I was not to spare. My pay, I was told, would be commensurate.

Onward and onward, over mountain, dell, vale, and rivers, the wild region of the Pacific slope of Mexico was left behind, the restless steeds flying over space wherever extra speed was possible. I had no idea what was to be done, more than that I realized that a precious life must be in peril. I dismounted in front of the portal an hour earlier than I had been expected, not, it is true, as bruised and lacerated as poor Mazeppa, for I was not tied, but of a certainty not as supple

and spry as a prize-fighter fresh upon the arena.

I found the patient to be the daughter of the house, an athletic, robust young woman, but the victim of fever, which, I was told, would certainly kill her within twenty-four hours, unless I succeeded in abating it sufficiently to prolong her life.

When I came to the bedside, her big, black eyes of sorrow met mine without twinkle of welcome. No smile of grateful anticipation played over her lips of sadness. Her lovely features wore the aspect of an unquiet mind. I recognized that I had a reluctant patient, in whose sight the undertaker would have found more favor than she vouchsafed me. Clearly, she wanted none of my assistance. Death was her fond dream of despair.

What could it all mean? One so young and beautiful was not wont to sink into the apathy of the long and dreamless sleep. I had never met the like before among the considerable number of fair patients I had treated. Without exception, they had desired to be cured and rarely obstructed my work with any whimsical foolishness. But here I was confronted by patent opposition, when so much was expected of me. I studied the girl intently, while pondering over a feasible line of treatment. She manifested impatience, that satisfied me that she was going to fight. I had much difficulty in making even an attempt at diagnosis. The girl was perfectly rational, although burning almost to a crackling with fever. She was fearfully nervous. She was suffering intense pain, yet, neither moaned nor winced.

I sat me down close up to the head of the bed and began to talk very kindly to her. I told her that her every thought and wish was as clear to my perception as they could be were they legibly printed across her forehead; that I knew she wanted no medication of mine, but desired to die; that I had ridden a hundred and fifty miles, actuated by the worthy motive of saving her life, which I meant to do, with or without her will and help; that the treatment would be gentle and considerate as that of an infant, if she was docile and sensible, but that, if she was stubborn and rebellious, the medication would proceed forcibly—if she so elected.

Then I proceeded to treat her about the same as I had recounted other treatments. An aunt of hers, a powerful, muscular woman, was to assist me. The girl offered no resistance, but swallowed the medicine presented without my having to resort to the hypodermic method.

I passed eight days and nights in that room of distress, sleeping on a lounge, at short snatches, ere the father would consent to let me go, although relief from the fever was complete in five days. The girl was dressed and up when I left. On the morning of the day, when I was to leave at noon, the father had gone to the church to have mass said. He had little more than left the premises, when the aunt rose and went out of the room, thus leaving the girl alone with me. She was dressed in a gown of the color of the rose and was seated in a rocking-chair, in front of me.

The Tragic Story of the Señorita

"Oh, doctor! my gracious aunt has given me a precious hour alone with you, so that I may not let you go away thinking that I am ungrateful. Truly, I am not grateful for your having saved my life, but, just as truly, doctor, I am grateful to you for your kindness to me more than I know words to tell. You read me with more than human sagacity. And when you know the life to which I am preserved, you will repent that you did not let me die and escape its fiendish woes.

"My mother—ye Gods of Mercy bless her!—was from your own sunny Southland of sorrow, as near an angel in human shape as ever graced the magic face of fair Mexico. My father, a hard, sordid man, is an octoroon, with Aztec blood coursing in his else pure Spanish current of life. I may do him injustice—God forbid that I should. He never abused nor crossed my dear mother, save in the awful eventuality to tell you of which I am paving the way.

"You have seen a sable-featured young man haunting the corridor like a demon of the wastes of Africa. He is the only heir to a vast estate adjoining that of my father's, and I am the only heir to my father's wealth. When we were yet little children, the two fathers plighted our troth, to be consummated when the boy attained his twenty-first year. He is now nineteen. I am one year his junior. From the first sight of him while I was yet a very small child, I ran from him screaming as I might have fled the approach of a mountain-lion; and never since has he grown less odious in my sight. He is illiterate and ignorant. Sometimes I have been forced into his presence by my father, but never have I received him as visitor otherwise. Yet, both he and my father are resolved that the nuptial farce shall be celebrated.

"My dear mother and aunt were ever partisans of mine, although not openly in opposition to my father. My aunt was many

years in a convent, having experienced a shipwreck in a love affair, but came here to her brother when all the convents were suppressed in Mexico. She and my mother were my teachers, English, as you perceive, being practically my native tongue, though Spanish and French are obedient to my uses. My mother inherited wealth in the country of her birth. The property, owing to the desolation of the Civil War, nearly worthless when she married my father who then was not a poor man, rose rapidly in value during the subsequent years; which fact, however, she concealed from my father, who knows no English and who never heeded her correspondence with her kindred. She secured her inheritance in United States treasury notes, and determined to use them, in some way, to save me from my horrid destiny.

"Barely six months ago, my mother went up yonder to the summit of the mournful hill, whither you intercepted my passage with such noble, yet, unkind solicitude.

"Well you may wonder that I am dwelling on such heart-rending theme with dry eyes and emotional composure. I have wept over the tomb of my mother and my own untold and nameless woe till the fountains of my tears at last have run dry. O God! that I could weep once again and quench the consuming fire that is seething in my tortured soul! Now you may better understand and more intently appreciate who and what I am and destined to be, unless that fatal spell which binds me so darkly may be sundered without snapping the thread of my miserable life.

"O doctor! doctor! imagine, if you have the heart even to try, my blue blood of pure white races and cultured refinement by force mated to ignorant brutality, brutality as loathsome to my finer sensibilities as the wolf is to the lamb. That horrid nightmare of wakeful life has blighted and withered every germ of the quintessence of love in my being, save for the memory of my mother and the presence of my aunt, who is goodness personified and crafty to the hoodwinking of my father in my interest—which she declares is no sin.

"You may regard me poetic, doctor! The very atmosphere that flows above in the azure vault is poetical, rife with the reverberation of the tumult and strife of the dead and nameless nations that repose beneath the consecrated dust of this enchanted land—as the conflicts raging in my lonely breast so eloquently typify. All nature is poetic and the very life of us a tragedy, as you must recognize in mine. Look away out yonder where

the playful breeze is curling up the blue crystal of the Pacific tide, and you will see a splendid epic eternally rolling. How I have longed in that burning fever to have repose beneath that glorious expanse of a winding sheet, deep down among the little coral plants.

"Now, my dear doctor, I come to the critical phase of my discourse, that calls me from recital to supplication, and I am going to give you the opportunity to endear yourself to me under the weight of a gratitude that no patient ever before was obligated to requite a physician. If you have loved and lost or loved in vain, or been the victim of other immedicable despair, or carry about with you in your great pilgrimage of mercy some sorrow as poignant as ever lurked in the shadow of a weeping-willow grove, you will heed my prayer and lend me a succoring hand.

"Look at me! think of me! remember me! the victim you snatched with a medical artist's hand from the sable barge that floats beneath the bridge of death, to languish in a hell on earth, in an agony of life that might conjure pity from the very archfiend himself. Help me to modify my nameless curse in a degree to escape that dreadful union, if my lot be to go down on my knees and scrub floors all my life. Nothing on earth, not even sheer dishonor, could be so horrible. Please do not repeat that old prescription, 'Reconcile thee to what is without remedy'! Every semblance of compatibility is twisted and bent. Life for me would be intolerable. The bare thought makes me shudder and my blood run cold and curdling in its channels.

"I have no idea how my mother contemplated saving me from the fate decreed by my father by the employment of American currency, unless it was to smuggle me out of the country—a difficult and dangerous venture, against the ramifications that my father can manipulate with the authorities.

"What I now implore you to do is, to study out some way to save me, not now, but to write to my aunt, with whose affairs of correspondence my father does not interfere, while he would intercept anything sent to me.

"My father will entreat you to send a doctor here to remain in the neighborhood. Should he be one worthy of your confidence as being incapable of betraying me, please, strive to make him instrumental in saving me. My aunt will place a sum of American currency in a package of lunch she will put up for you to carry, to defray whatever expenses may be necessary to develop some method for me to escape my appalling peril."

(To be continued)

A Study of Aconite

By H. J. ACHARD, M. D., Chicago, Illinois

EDITORIAL NOTE.—*This is the first of a series of articles presenting a study of aconite and its alkaloids; remedies which not only have an interesting history but show signs of coming back into their own, after a temporary obscuration. In accordance with an important therapeutic use of aconite preparations, these articles will include a study of fever and of its treatment according to modern conceptions.*

FOR more than one and one-half centuries aconite has been used by the medical profession as a therapeutic agent, and it has given rise to a considerable literature, the catalog of the Surgeon-General's library listing 46 books and pamphlets and 280 magazine-articles. However, the difficulty of establishing a pharmacological standard and of determining its definite action upon respiration, circulation, and the nerve-centers, besides, fully as much, the occasional cases of poisoning reported, gradually led to the virtual abandonment of this potent drug, until the opinion has repeatedly found expression, within recent years, that aconite is an obsolete remedy.

Aconite has an interesting history, showing a remarkable variation in its employment. It is one of those drugs that found greater favor in the eyes of earlier clinicians than they do today, and in an editorial that has appeared in *The Medical Record*, it has been suggested that probably its indiscriminate use in a great variety of febrile conditions caused the pendulum to swing in the direction of the almost absolute neglect of this valuable therapeutic agent. However, latterly this remedy is growing in favor and is beginning to come into its own again.

Conflicting Testimony

For a scholarly review of the early and earliest history of aconite, I refer to the series of articles by John Knott, of Dublin, which appeared in 1910, during September and October, in *The New York Medical Journal*. It seems that this drug was introduced into the materia medica by Stoerck, of Vienna (1762), who employed it as a diaphoretic and diuretic in chronic rheumatism, gout, phthisis, and a great variety of other diseases. Hahnemann, after some experimentation, in 1796, recommended its use in inflammatory fevers, and Lombard, in 1835, advocated it, as an anodyne and antiphlogistic, in acute rheumatism and other acute local inflammations.

Its use as a circulatory depressant seems to date back to the middle of the nineteenth century, when Fleming called attention to the action of the drug in slowing the heart's rate, and in subsequent medical literature

this action was commonly ascribed to it. Yet, according to recent, and careful, clinical observations and experimentation, any influence upon the circulation from the customary doses is asserted to be doubtful.

It was this unreliability of the tincture and other galenic preparations of aconite, and the further fact that many physicians failed to observe the effects that they had been led to expect, that gradually caused the drug to fall into disrepute or at least under suspicion. However, the positive and emphatic declaration of Professor Burggraave as to its many virtues in the treatment of febrile conditions caused the alkaloid of aconite, both in the amorphous and the crystalline form, to be employed with increasing confidence, and these alkaloidal constituents of the plant are now in wide use by general practitioners all over the United States, as well as in other countries.

In "Merck's Annual Report" for 1909 (vol. 23), there is specifically pointed out the desirability of determining definitely the exact form in which drugs are to be used, and the fact is deplored that, in the case of aconitine, the various modifications and preparations, with their associated varied modes of action, have prevented many from assigning to aconitine its true value. It, therefore, is desirable, this authority emphasizes, that physicians should decide, once and for all, in favor of pure crystalline aconitine, the form that is most readily tested and most uniform in action. The belief is expressed that the question of dosage, which has not yet been settled, will then receive a definite solution.

As to the actual therapeutic value of aconite, it may be said that, despite many attempts to discredit it, the experience of careful physicians who have used a reliable preparation of the drug systematically and in considerable numbers of cases has led to the conviction that it is a most useful as well as very safe remedy, provided its effects are watched carefully. Indeed, Gustavus Eliot ("International Clinics," 1914, vol. 4, p. 125) asserts that this remedy is just as useful today as it ever was, and in most cases is just as good as, and somewhat safer than, other

drugs or combinations of drugs that are being used to meet similar indications. H. H. Rusby ("Reference Handbook of the Medical Sciences," 3d edition, vol. 1, p. 93) declares that aconite is one of the most useful drugs in the Pharmacopeia, which acts especially well with children, and that even very small doses often give satisfactory results. Also, in the opinion of the editorial writer in *The Medical Record* mentioned above, "there is no other drug which can approach it as an efficient means of reducing high arterial blood pressure. This is a conclusion which has been reached by many observers and which should be widely recognized by the medical profession."

The Pharmacology and Chemistry of Aconitine

Aconitine belongs to a series of alkaloids that resemble each other very closely in their chemical and pharmacological properties. They comprise the alkaloids found in several species of the genus *aconitum*, the best-known of which are the *aconitum napellus* (containing aconitine), *aconitum ferox* (containing pseudoaconitine), and *aconitum japonicum* (containing japaconitine). An alkaloid which closely resembles aconitine in its pharmacological action is that called delphinine.

The alkaloid aconitine is derived from the root of *aconitum napellus*—the root being the only official portion, although the alkaloid is present in the whole plant. The root is from three to four inches long, strongly tapering, and about three-fourths of an inch in diameter at the base. It has occasionally been mistaken for horseradish and thus been the cause of a number of cases of poisoning.

The plant was known to the ancients as one of the most potent and most feared poisons, and was employed by the Gauls as an arrow-poison. The alkaloid originally was isolated in an amorphous form by Geiger and Hesse, in 1833, but Duquesnel produced it in the chemically pure crystalline form in 1870.

When the aqueous solution of aconitine is heated, it is broken up into acetic acid and benzaconine (or picraconitine), which may again be broken down into benzoic acid and aconine, so that aconitine is acetyl-benzoyl-aconine. These decomposition-products are found in the plant, and thus in the ordinary preparations and in many of the commercial "aconitines," so that their toxicity varies very considerably.

Th. Cash and Wyndham R. Dunstan (*Brit. Med. Jour.*, 1901, II, No. 2120, Epit. p. 28) mention four commercial brands of aconitine,

namely: crystallized aconitine, amorphous aconitine, pseudoaconitine, and japaconitine.

The amorphous aconitine has been shown to be a mixture of several bases, its principal constituents being aconitine and picraconitine. It is from fifteen to twenty times less poisonous than pure crystallized aconitine, and corresponds to the formula $C_{33}H_{43}NO_{12}$. Pseudoaconitine is extracted from the bulbs of *aconitum ferox*, the Indian aconite-root, and corresponds to the formula $C_{36}H_{49}NO_{12}$. Japaconitine, which is derived from the bulbs of the Japanese aconite (*aconitum japonicum*), corresponds, by calculation, to the formula $C_{34}H_{49}NO_{11}$. The three aconitines—that is, *aconitina crystallisata*, *pseudoaconitina*, and *japaconitina*—do not differ in the nature but merely in the degree of their physiological action, one part of crystallized aconitine corresponding in its efficacy to 0.4 or 0.5 parts of pseudoaconitine and to 0.8 parts of japaconitine. Crystallized aconitine, accordingly, is 50 percent milder in its action than pseudoaconitine, while japaconitine is about 20 percent more intense than crystallized aconitine. These relative facts should be borne in mind in fixing the doses for these three alkaloids.

According to Rusby, the amount of aconitine in a first-class specimen of the root is about seven one-hundredths (7-100) of one percent. In addition, there is present a small amount of picraconitine or isaconitine and a large amount of aconitic acid in combination with calcium; resin and slight amounts of fat and sugar also are found.

It has been asserted that the wild-growing plants are richer in their supply of the active constituents than are the cultivated ones; but Rusby declares, on the contrary, that the amount of the alkaloid is increased by cultivation. This fact has been now established beyond a doubt, and it is due to the selection practiced, the seeds of particularly rich plants being chosen for subsequent crops. Schroff found that the plant is more active—physiologically and toxicologically—before flowering than after; an interesting botanical fact, which is explained by John Knott as being dependent upon the upward trend of the stored-up active principles, from root to flower, at the season of renewed vegetative activity. Nevertheless, evidence accumulates that those aconite-roots which have been partly exhausted of their starch by the growth of the stem and, thus, are hollow or shriveled, are richer in alkaloid (Rusby, *Jour. Amer. Pharm. Asso.*, 1913, v. 2, p. 686).

Unfortunately, it is a fact that the roots deteriorate in time, and, moreover, that they often are adulterated by the addition of roots from other species of *aconitum*. Finally there are considerable annual variations in the active principles contained in aconite-roots. One Swiss pharmacologist has asserted that in the course of four years aconite from the same source varied between 0.042 percent and 0.104 percent of alkaloidal content. The crystalline aconitine of Duquesnel occurs in colorless or white odorless permanent rhombic, plates or prisms.

The official preparations of aconite-root are: a solid extract, a fluid extract, and a tincture. The National Formulary also lists an oleate of aconite and a liniment of aconite and chloroform. Besides these, chief among the official preparations, we have granules of aconitine of various composition, a leading brand being made with the hydrobromide, each granule representing 1-800 grain, or

1-125 milligram. The advantage of using this salt lies in its ready solubility, in contrast to the pure alkaloid which is insoluble in water.

The foremost characteristics of the aconite plant, in its every part, and, thus, of its galenical preparations and, of course, the isolated alkaloids are, an intensely acrid bitter taste and the property of producing a tingling sensation in tongue and lips, followed by a sense as of numbness. Under no circumstance should the alkaloid itself ever be tasted, and a solution of it only in great dilution, and even then with the utmost caution, remembering that several cases of laboratory poisoning, in which this precaution had been neglected, are on record; a single drop of an aqueous solution of aconitine or of one of its salts, in the proportion of 1 in 100,000, when placed on the tongue being sufficient to produce the characteristic tingling and numbing sensation.

[To be continued]

Infections About the Rectum

By CHARLES J. DRUECK, M. D., Chicago, Illinois

IN presenting this paper, it is my desire to fix clearly in your minds the clinical pathology and the principles of treatment of the septic collections forming about the rectum, when involving different pelvic structures, and to suggest, not only what should be attempted, but also what should not be done; and this theme will include every gathering of pus, from a furuncle at the anal margin to the serious diffuse pelvic phlegmon that not only involves the rectum, but any and perhaps all other pelvic and even abdominal organs. The exact origin of the infection cannot always be demonstrated, neither can it be referred to the rectum, in every case. The treatment, varies so much that each form of infection must be considered separately.

The rectum is surrounded by loose areolar tissue, which is abundantly supplied with blood-vessels and lymphatics and which easily and frequently becomes infected or inflamed by extension from the rectum and anus or by obstruction of the circulation. There is a continual variation of blood-pressure in these tissues, depending upon the degree of fulness or distention of the bladder and rectum, even on the position of the abdominal organs. These alterations play a decided part in the development of these infections. The rectum at all times harbors hordes of infective microorganisms, and the process of osmosis from

the rectum certainly absorbs their toxins, while doubtless at times the germs themselves pass through the rectal wall by way of the lymphatics. The inflammatory reaction caused by these infections may be diffuse or circumscribed and usually goes on to abscess formation.

A perirectal abscess may be owing to one or more of several pathogenic microorganisms, the most common being the tubercle bacillus. Koch has asserted that the tubercle bacilli are never found in the rectum except when tuberculous ulceration of the intestine exists; but von Jaksch has demonstrated their presence in the stools of patients who did not have intestinal tuberculosis. Simons (quoted by Tuttle) has shown that the gastric juice, while it prevents the growth and development of tubercle bacilli, does not kill them and that, when they pass into the alkaline intestinal juice, they still retain vitality; which proves that the bacilli may pass through the intestinal canal and eventually attack the lower bowel, or rectum, without having gained a foothold in the intestine proper. Perianal and perirectal tuberculous abscesses frequently constitute the first evidence of infection, while the patient does not exhibit either then or even later any pulmonary involvement. To be sure, the infected discharges enter the alimentary

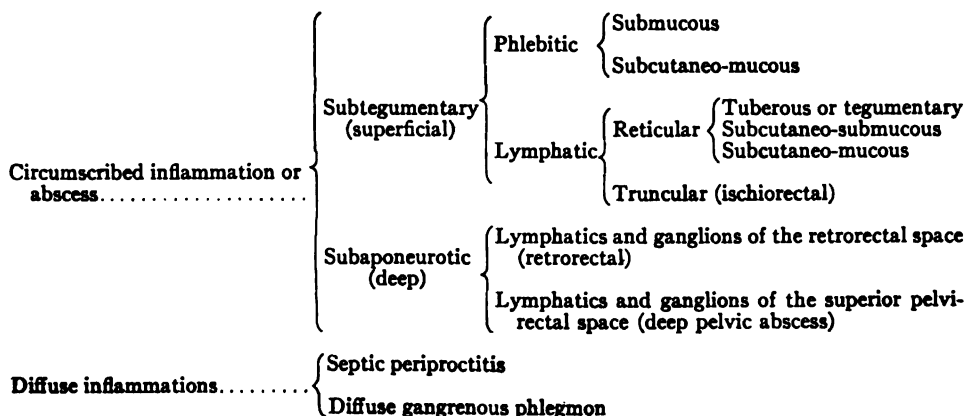
canal very easily from tuberculosis of the nose, throat or respiratory tract; it also is possible that patients may be infected from rectal tips, bougies, and, other instruments that have been used on tuberculous subjects.

The colon bacillus is the germ coming next in point of frequency to be found in perirectal infections, and this seems to assume an ameboid power as soon as any injury to the epithelial layer of the mucous membrane permits it to escape from the intestine. Vaughn has carried out some interesting studies as to why this migration of the colon bacillus is not always followed by abscess formation. He states that each bacillus is provided with a capsule that contains the toxic principle, and that this capsule is not dissolved or destroyed by the alkaline fluids of the intestine, but is broken up by the gastric fluid, thus setting free the toxins. He further considers it possible that the blood-serum also possesses this solvent property: when the bacillus enters an area with engorged capillaries, the capsule is ruptured and the toxins are set free. Colon bacilli occasionally are found in pure culture in these abscesses, but are more often associated with staphylococci, streptococci or tubercle bacilli.

Naturally, there must be a solution of continuity somewhere in the mucous membrane of the rectum or on the skin of the anus, thus admitting the infection to the deeper cellular tissues. The point of entrance and the nature and depths of the lesion determine somewhat the location of the abscess, but the condition of the local lymphatic and capillary circulation and the variety of the invading micro-organisms constitute the chief factors.

Classification of Perianal Abscesses

The classification of perianal and perirectal abscess by Quénu and Hartman is the most concise and complete one attempted:



The diffuse forms of the infection may develop as extensions of the superficial. Subaponeurotic abscesses are above the levator-ani muscle.

There are three distinct systems of lymphatics about the rectum and anus and a study of these will give us some idea as to the direction the infection is likely to travel.

How the Infection Spreads

These lymphatics in the skin about the anus that are called the middle hemorrhoidal lymphatics travel along the perineum toward the inguinal glands or else back behind the sacrum. The deeper lymphatics pass through the ischiorectal space to the hypogastric ganglia and make up the superior hemorrhoidal system. It connects with vessels supplying the gluteal tissues through the ischiatic notch and obturator foramen. Those lymphatics around the deep rectum pass to the sacral and vertebral lymphatics.

Infection-toxins gathered up by any of these systems may be followed along the chain. When the glands retain the poison and become inflamed, passage is blocked along that particular chain, but, as the networks anastomose freely, not only with other branches of the same system, but also with deeper systems, the infection may thus be carried along other channels. In this manner, two or more distinct and separate abscesses may develop.

This intimate relationship of the various lymphatics explains the occasional development of abscesses quite distant from the rectum, but following a very simple local infection. Tuttle, speaking of this, calls attention to the fact that injuries of the anal canal may be followed by abscess of the ischiorectal fossa or in the cutaneous tissues of the buttock, while injuries deep in the rectum are likely to be followed by abscess

in the retrorectal space or deep in the thigh.

Marginal Abscess

Marginal abscesses arise at the anal margin and involve only the superficial tissues of the skin or mucous membrane. The infection may occur through a hair-follicle or Lieberkühn gland, or by way of abrasions from coarse clothes, scratching, horseback or bicycle riding, irritating toilet-paper, and discharges, either menstrual or diarrheal.

These infected areas may vary in size from that of a little acne-point to that of a pocket as large as a hazelnut. The lymphatics may carry the infection from such a simple focus to other tissues and thus a larger area become involved; but the toxin is always carried in the superficial channels and never invades the ischiorectal fossa or other deep tissues. This is a true follicular abscess, and the symptoms correspond with those of follicular abscess anywhere; a tingling, burning pain is followed by a swelling, which finally ruptures, when pus and sometimes necrotic tissue (core) escapes. Rarely such an abscess is deep-seated, but, if so, the symptoms are more severe and the whole picture resembles that of a carbuncle. Such a termination fortunately is unusual. These furuncles may be single or multiple and at times come in almost continuous crops, until they make life a torment. Usually they do not invade the rectum and, therefore, do not interfere with defecation, but the patient cannot sit or walk and must take to his bed.

Eczeema, erythema, and herpes may be etiological factors in these abscesses. Thrombotic hemorrhoids and other blood clots, when near the skin, put the latter or the mucous membrane in considerable tension and, rupturing the base of the glands or follicles, open up the skin. Also, any pyogenic organisms circulating in the blood are likely to be deposited on this broken vessel and clot. There usually is a somewhat elevated temperature, but systemic complications are absent. Although this region is so richly supplied with lymphatics, both superficial and deep, the walls of the follicle prevent invasion of the deeper tissues, the abscess ruptures upon the surface of the skin or mucous membrane, and it heals without leaving a fistula, although in weak or tuberculous subjects a sinus sometimes forms.

The treatment of marginal abscesses differs radically from that of the deeper forms, in that incision and drainage frequently are followed by untoward complications. In a

few instances, where the patient has learned by experience the course these infections run, he may apply early for treatment.

If the patient is seen before suppuration has actually developed, the colon should be thoroughly flushed out and then the bowels constipated by means of opium; after which he is kept in bed and put on a restricted absorbable diet, while ice-bags are applied to the anus. The area of local inflammation for 3 or 4 inches around should be painted with ichthyol (undiluted) two or three times daily, succeeding applications being put on without first washing off what remains on the skin. Very good results have been asserted to follow injections of 95-percent carbolic acid or of a strong salicylic-acid solution directly into the follicle if made in the early stage.

Where there is a tendency to recurrent crops, Hartman (Tuttle) recommends a 10-percent solution of salicylic acid in glycerin which is to be applied by the patient, himself, while after each defecation the parts should be bathed with a mild antiseptic solution.

The only time when these purely cutaneous abscesses should be incised is when a collection of pus may be evacuated by a simple puncture with a bistoury, and this cavity should be filled with ichthyol. A deeper and wider incision is liable to open the subcutaneous tissues to infection, where nature had walled them off. The x-ray seems to promise a great deal in these cases of continually recurring crops of furuncles; still, what I have seen is, as yet, so recent that it does not justify an enthusiastic report.

Abscess beneath the perineal skin or beneath the mucous membrane of the rectum is a common affection of these parts. It is practically always secondary to some other disturbances and results from infection of the lymphatics, although the abrasion of the skin or mucous membrane cannot always be found. The infection, in being carried off, results either in a breaking-down of the gland or in thrombosis of the lymph canal, and thus circumscribes the abscess. These abscesses occur most frequently in hearty, robust men, seldom in women or old people, and almost never in children, except for the tuberculous abscesses that occur very frequently in little ones four to six years old. Cutaneous hemorrhoids (the remains of former thrombi) always are subject to recurrent inflammation and infection. The injection of hemorrhoids with carbolic acid is quite frequently followed by this form of abscess. Quénu considers these abscesses to constitute a lymphangitis,

the result of infection carried by these vessels from the rectum. The inflammation is diffuse and lies beneath the skin, and produces a subcutaneomucous abscess, or, if within the rectum, a submucous abscess.

The symptoms of this form of abscess vary. It may develop without any systemic involvement, no chill and but very little fever or pain occurring. The abscess opens early and exudes a thin watery pus. A small ulcerated opening is found in the skin or through the mucous membrane into the rectum. The tissues are undermined with a soft, boggy mass all around this opening, and sometimes this burrowing is quite extensive, particularly up between the rectal coats, where it frequently forms fistulous openings into the rectum. Considerable burrowing may occur before any opening is made. With all this breaking down beneath the surface, there is usually very little inflammatory reaction in the skin. In other instances, there is marked systemic reaction, a sharp chill, rapid pulse, fever, and general malaise. The local symptoms develop, less suddenly, with a feeling of fulness and indistinct soreness, which gradually localizes and becomes sharply defined. There are present all the signs of infection. The tumor, located on one side of the rectum, is hot, red or violet in color, and tender and throbbing. Cases with such an onset and showing such severe systemic invasion nearly always are caused by septic microorganisms, frequently a mixture of the streptococci and colon bacilli. The tubercle bacilli develop "cold" abscesses.

The location of the abscess somewhat determines the severity of the pain. Abscesses situated near the anus, where there is considerable loose areolar tissue that is easily distended, are much less painful than those higher up, where the various structures are firmly bound by the muscles and fasciæ. Spastic contraction of the sphincter increases the pain.

When the abscess develops above the sphincter, it may open into the lumen of the rectum and then gives no external evidence. However, digital examination will disclose a globular mass, indurated or fluctuating, according to the phase of its development.

The natural course of these abscesses is, to rupture spontaneously. If the abscess ruptures through the skin, the result is a blind *ex*-ternal fistula; if it opens within the rectum or anal canal, it is a blind *in*-ternal fistula; or, if through the skin and also into the rectum it forms a complete fistula. Very frequently in low-seated abscesses the internal opening will be found just within the

anus. The distinguishing feature about these abscesses is, that they do not drain and heal like abscesses elsewhere, but continue to remain as sinuses. When the abscess develops between the layers of the rectal wall, it is called intramural.

Its constitutional symptoms are slight, usually consisting in a sense of heaviness in the rectum, painful defecation, and sometimes retention of urine. All these symptoms are present also in the case of inflamed internal hemorrhoids, so that, without a careful examination, an erroneous diagnosis may be made. Digital examination discloses local tenderness, swelling, and perhaps fluctuations. Bimanual palpation, with one finger in the rectum and counterpressure on the perineum, will prove of value in the early diagnosis.

Just as I urged the importance of therapeutic treatment in marginal abscesses, so I wish now to emphasize the fact that, except where malignant disease or syphilis complicate, the deep abscess does not respond to anything except surgical measures—therapeutics here are a waste of valuable time.

In many of the early cases, local anesthesia may be used. By first touching the spot on the skin with pure carbolic acid on a probe or by firmly pinching the skin between the fingers for a few minutes, sensation is destroyed enough to permit introduction of the hypodermic needle, whereupon the cocaine-solution is injected. The incision should be a generous one and extend from the anus across the full length of the abscess. Diverticuli in the acute abscesses drain well through the main cavity and need no lateral incisions.

The cavity should be thoroughly flushed out twice a day with physiologic salt-solution or a mild antiseptic. In the intramural variety in any instance where the incision has been carried through the sphincter, it is necessary to dilate the anal canal, or at least the anus, sufficiently to open and cleanse the whole wound. The intramural abscess between the mucosa and musculature of the rectum must be opened from within the anus. Dissection through the external wound upward alongside the rectum is not followed by good results. The important part is, to carry the incision wide enough to leave no possibility of a pocket at the lower end of the wound—a condition similar to what occurs when the abscess opens spontaneously.

Rest in bed is essential to rapid recovery, for most patients get along more quickly and more satisfactorily if kept in the recumbent position.

[To be continued.]

Vaccine- and Serum- Therapy in Everyday Practice

X. Infections of the Respiratory Tract

By W. C. WOLVERTON, M. D., Linton, North Dakota

[Continued from November issue, page 924.]

Acute Catarrhal Rhinitis

QUITE a variety of bacteria are, apparently, capable of setting up an acute inflammation of the nasal mucosa (coryza, "cold in the head"), among them being the bacillus septus (*B. coryzae segmentosus*), influenza-bacillus, micrococcus catarrhalis, Friedlaender's bacillus, streptococcus, and possibly some of the staphylococci. A combination of two or more of these pathogenic bacteria is the rule in the disease under discussion, thus constituting a "mixed infection."

The person who is continually "catching cold" should have his nose and throat examined, and, abnormalities, such as hypertrophied turbinates, a badly deviated septum or septal ridges and spurs, should be given proper surgical attention, at a time when the victim is free from a cold. Proper attention should, of course, be given to the matter of proper clothing and footwear.

As regards bacterin-therapy, a combined bacterin containing the predominant organisms commonly found in this condition should be administered as early in the course of the attack as possible. A serviceable combined bacterin for the acute catarrhs contains the following: bacillus influenzae, 200 millions; streptococcus, 60 millions; pneumococcus, 80 millions; micrococcus catarrhalis, 200 millions; staphylococcus aureus and albus, 200 millions each in 1 cubic centimeter of the stock bacterin. The dose of such a bacterin is from 0.3 mils (Cc.) to 0.5 mils (Cc.).

A necessary adjunct treatment consists in the employment of a nasal spray or douche with one of the alkaline antiseptic solutions, at intervals of about two hours, for the purpose of washing away the accumulations of nasal secretions, inhaled dust, and proliferating bacteria. The solution employed for this purpose must be *warmed* to body-temperature; cold solutions aggravate the congestion. The atomizer may be warmed by setting it, for a few minutes before using, in warm water.

The bowels are best emptied by means of a combination of calomel and phenolphthalein,

these having a cholagog action which is especially desirable here, when heat production by the glandular structures (of which the liver is the greatest) has been thrown out of equilibrium.

If there is much elevation of temperature, aconitine and veratrine are indicated. Aspirin is to be given if aches and pains are a prominent symptom.

Chronic Catarrhal Rhinitis

The bacteriology of nasal catarrh is practically the same as that of the acute form, with the possible exception that the pneumobacillus of Friedlaender is a more constant factor in the chronic than in the acute form. A bacterin containing the following microorganisms is indicated: Friedlaender's bacillus, micrococcus catarrhalis, pneumococcus, streptococcus pyogenes, staphylococcus pyogenes, aureus and albus. The doses of the various organisms are about as stated under acute rhinitis, with the addition of Friedlaender's bacillus, the initial dose of which latter is 100 millions. The interval between doses, as in chronic conditions in general, is about one week.

In chronic nasal catarrh, the use of sprays or douches is especially indicated, because of the accumulation of mucus and mucopurulent material, dust, and bacteria. Only *warm* solutions should be employed, for reasons stated before. Often it is well to use a cleansing alkaline solution, and then to follow this with a spray of 1 percent of menthol in refined low-gravity liquid paraffin.

When marked improvement does not follow treatment with a stock bacterin, it is well to have an autogenous preparation made from some of the patient's secretion. In any case, treatment should be begun with small doses these gradually increased, and then continued over a long period of time, before abandoning this form of treatment.

Ozena

In fetid atrophic rhinitis—this distressing condition—an organism known as the bacillus of Perez is very much under suspicion as being the causative agent. A good deal of experimental work is being done by a number

of investigators with bacterins prepared from this germ, and encouraging results have been reported. It is to be hoped that a more extended trial will prove the bacterin to be a reliable remedial measure.

Tamponing the nasal fossæ with cotton saturated with a 1-percent solution of iodine in glycerin exerts a stimulating effect upon the atrophic mucosa. Oily sprays are useful for loosening the crusts.

Infections of the Nasal Accessory Sinuses

Infections of these cavities, in my experience, are much more common than is generally believed, and this is true especially for the antrum of Highmore and the frontal sinus. These sinuses, communicating, as they do, with the nasal fossæ, frequently become infected during the course of an ordinary coryza or as a complication of influenza. A spray containing adrenalin, 1:4000, with cocaine in 2-percent strength, usually secures drainage of the infected sinus, by causing a shrinking of the mucosa around the orifice of the cavity. However, if this combination fails to afford adequate exit for the pus, the opening must be enlarged by proper operative procedure. Ofttimes, when the antrum is infected through the root-canal of a carious tooth, the extraction of the offending tooth will give sufficient drainage.

The bacteriology of sinus infections is that of the primary infection of the nasal cavities, in acute cases; in the more chronic infections of the accessory sinuses, the same etiologic agents are present, plus, occasionally, such other bacteria as the bacillus pyocyaneus, the pseudodiphtheria-bacillus, and colon-bacillus.

When a stock bacterin containing the organisms named fails to bring about improvement, a bacteriologic examination of the nasal secretion should be made, and, if any unusual pathogenic germ is discovered, a corresponding stock or autogenous bacterin should be tried.

In some resistant chronic antrum infections, injection of the cavity with Beck's bismuth paste generally proves of value. However, in using this remedy in closed cavities, one always should be on the lookout for bismuth poisoning. If any signs of this trouble make themselves manifest, the paste must be removed from the antrum by injecting warm olive-oil, when the symptoms will subside.

Acute Bronchitis

Infections of the bronchial passages usually are due to some combination of the following

bacteria: pneumococcus, streptococcus, micrococcus catarrhalis, and staphylococcus. A combined stock bacterin, then, containing the varieties of pathogenic germs just named is indicated in the treatment of acute bronchitis. The proper dose of each variety of bacteria is the same as that of the same germs as heretofore given when considering acute infections generally. The interval between doses of the bacterin should be from twenty-four hours to four days.

Next to the bacterin-treatment, the best single remedy I have found for this distressing ailment is, the inhalation of steam charged with the vapor of compound tincture of benzoin. The relief obtained from this measure is immediate and gratifying. About 1-2 dram of the benzoin tincture is poured into the water boiling in a "croup-kettle" or, lacking that, a tea- or coffee-pot with a small spout. The steam, as it escapes from the spout, is heavily charged with the medicament and is to be inhaled deeply, care being taken that the face is held far enough away from the spout to avoid scalding. This inhalation of medicated steam may be repeated every few hours, as required.

At the onset of an attack of acute bronchitis, it is well to empty the intestinal tract thoroughly by means of what my German-born druggist terms a "42-centimeter shell," or, in other words, a capsule containing 3 or 4 grains each of calomel, sodium bicarbonate, jalapin, and phenolphthalein. This may sound like a "shotgun" mixture; but, as a matter of fact, it is a very fine combination, useful in a great many conditions besides the one under discussion; and it rarely causes griping.

If any considerable degree of fever is present, veratrine is the indicated remedy, because of its relaxant action.

For the "dry" stage, camphorated tincture of opium and tartar emetic (gr. 1-12 to 1-8) in bitter-almond water, with a little fluid extract of glycyrrhiza, makes a very efficient cough-mixture, and is quite palatable, besides. A little later, when a stimulating expectorant is required, a No. 0 or No. 00 capsule filled with a mixture of equal parts of oil of santal and oil of eucalyptus, given every four hours, is a remedy that I have found to give great relief.

One more remedy should not be overlooked in discussing the medicinal treatment of acute bronchitis, and that is, a full dose, before retiring, of the powder of ipecac and opium, followed by a hot drink. This is a time-tried remedy and undoubtedly is.

of great value when taken early in the attack.

Chronic Bronchitis

The bacteriology of chronic bronchitis is the same as in the acute form of the disease, plus the bacillus of Friedlaender. The bacterin administered should contain the varieties of bacteria mentioned under "Acute Bronchitis," and, in addition, the last-named bacillus. The dosage should be somewhat—say, a fourth—larger than in the acute condition; while the interval should be longer, as in other chronic conditions. Here, the intervals between inoculations should be from five to ten days. The dose is to be increased gradually as the interval is lengthened.

Inhalations of medicated steam, once or oftener, each day, are of value. Compound tincture of benzoin may be used with which to saturate the hot vapor to be inhaled before retiring, because of its soothing action. During the day, oil of pine-needles, terebene, and oil of eucalyptus may well replace the benzoin, for their stimulating and antiseptic effect on the bronchial mucosa.

Equal parts of a mixture of the oils of santalwood, cubebs, and copaiba may be administered, three or four times daily (after meals and at bedtime), in dosage of a No. 00 capsuleful of the mixture.

Tartar emetic, 1-12 to 1-8 grain, constitutes a fine expectorant when the secretion is thick and viscid.

Asthma

In discussing the treatment of asthma, we may as well say at the start that we do not regard this as an infectious disease. However, if upon a highly irritable mucous membrane there be implanted a mixture of various pathogenic bacteria of greater or less virulence, it is logical to conclude that the primary condition will be aggravated thereby. Hence,

the employment of a mixed stock bacterin identical with that recommended under "Chronic Bronchitis." The dosage and interval likewise are the same in the two conditions.

During the interval between the asthmatic paroxysms, a careful examination of the nasal passages should be made, and if anything in the way of a nasal stenosis exists it should be remedied surgically. The heart, also, should be carefully examined, and the blood pressure determined. If high blood pressure exists, some form of iodine-therapy should be employed. For the paroxysm, a hypodermatic injection of a combination of morphine, atropine, and nitroglycerin gives quick relief. Inhalations of the benzoinated steam, as referred to under "Bronchitis," are of value.

Hay-Fever (Pollinosis)

The reason for the employment of bacterins in the treatment of hay-fever is the same as that given under "Asthma." The real etiologic agent is the pollen of various plants, ragweed, goldenrod, roses, among them. There are now obtainable "vaccines" or "pollen-extracts" prepared from the pollens of the plants just mentioned. The administration of this "pollen-vaccine," best given as a combined vaccine, should be begun a month or six weeks before the date which the patient knows from sad experience will mark the onset of the attack. The vaccine is given at weekly intervals. It is my custom to administer a combined bacterial vaccine simultaneously with each dose of the pollen-vaccine. The proper bacterin is that described under "Chronic Bronchitis" and "Asthma."

In the interval, either spring or autumn, a careful examination should be made for any existing form of nasal stenosis, and, if found, be remedied by the proper surgical procedure.

[To be continued]

"VANITY"

COME, oh! my young brother bucks, let us be vain together. Let us join hands, and help each other to increase our vanity. Let us be vain, not of our trousers and hair, but of brave hearts and working hands, of truth, of purity, of nobility. Let us be too vain to stoop to aught that is mean or base, too vain for petty selfishness and littleminded envy, too vain to say an unkind word or do an unkind act. Let us be vain of being singlehearted, upright gentlemen in the midst of a world of knaves. Let us pride ourselves upon thinking high thoughts, achieving great deeds, living good lives.—*Ik Marvel.*

What Others are Doing

CHLORINE, THE BEST PARASITICIDE FOR CLOTHING AND DOMICILE

According to Sigmund Fraenkel (Proc. Soc. Phys. of Vienna—*Muench. Med. Woch.*, 1915, No. 18), chlorine has been found best for ridding clothing and the living-quarters of parasites, particularly lice. His directions are as follows:

Into a capacious wooden vessel (tub, barrel; but any glazed receptacle will serve), pour the desired amount of water, and then for each 100 liters add 1 kilo of chlorinated lime. Stir well and cover tightly. Next, a short time before using, stir in 500 Cc. of full-strength crude hydrochloric acid. Impure chlorine gas is set free, part of which remains dissolved in the water. Both will kill the parasites. Wool and cotton are not injured by it. The liquid may be sprayed over walls and flooring. [Chlorine attacks many colors, various metals, and spoils wall-paper.—Ed.]

Incidentally, it may be stated in this connection that, according to G. Walker (*loc. cit.*, p. 630), a dry temperature of 55° C. (131° F.) infallibly kills lice in from one to two minutes, while at 50° C. (122° F.) they will die inside of ten minutes. A temperature of 35° C. (94.5° F.), named by some, is too low. The nits are killed at 60° C. (140° F.), through coagulation of their albumin. The coldest weather of winter will not destroy the lice, although rendering them inactive.

CONDITIONAL STERILIZATION OF WOMEN

The wife of a pastor had given birth to five children in as many successive years and under conditions that further pregnancies probably threatened her life or her sanity. Sterilizing was imperatively indicated, yet, the woman did not wish to preclude entirely the possibility of again having a child. Dr. W. Stoeckel, of Kiel, solved the problem by effecting an extraperitoneal transposition of the tubes.

Stoeckel laid open the inguinal canal, as in the Alexander-Adams operation, cutting

through the perineum and drawing out the tubes, which latter he had then imbedded between the abdominal muscles and the anterior fasciæ of the andominal wall. The tubes were "wiped" or "fished" out through the inguinal canal by means of a small long-handled applicator.

SPIROCHETES AS PATHOGENETIC FACTORS IN DYSENTERY

Under another heading, we discuss a paper by Martin Meyer on lamblia as a cause of dysentery, and reference is made to the presence, in a patient's alvine discharges, of spirochetes, these disappearing after the administration of emetine. In that connection, the author recounts how Le Dautec was the first one to describe (*Compt. Rend. Soc. d. Biol.*, 1903, p. 617) what he considered spirochete dysenteries.

There still does not seem to be unanimity as to the real role of enteric spirochetes (a subject discussed at length by Neumann and Mayer in their "Tierische Parasiten," 1914), but one fact established is that under certain conditions their multiplication is favored without their being actively concerned in the disease-process. This has been demonstrated, for example, by Escherich, who (1884) saw this occur in cholera-dejecta. The same thing Mayer believes to have been true in the case described by him. In this patient's stools, the spirochetes (numerous), he says, were very fine filaments and presented two or three open spiral turns.

THE HARRISON LAW: A TEXAS EXPERIENCE

I want to congratulate the brother from Michigan [March, p. 264], for writing that article upon the Harrison law. What he has said in regard to the doctors being placed at the mercy of an inspector is only too true. I believe it is in the power of every inspector, should he choose to do so, to ruin any physician, if one has prescribed narcotics at all.

It matters not how carefully the physician has complied with the requirements he can

be arrested, tried before the commissioner, and, if dismissed by the commissioner, that inspector still has the power to drag him before the grand jury. He may be discharged by the jury, but the inspector can have him arrested on another charge and put him through another expensive course; and thus he can continue until his revenge has been satisfied. The inspector is under no expense, and he can continue a fight against you *ad libitum*.

I know a druggist who gave a doctor six hyoscine-morphine tablets in a case of extreme emergency. The doctor had sent for blanks, but had not received them; so, he wrote on a prescription-blank and stated that he had sent for federal blanks, and that this was an emergency-case. It has cost the druggist \$350, and the case has not yet reached the federal court. I do not know what compromise the doctor made. He was arrested, but I think the case against him was compromised. Two years ago, this particular inspector had some personal trouble with the druggist.

The lawyers here tell the doctors not to displease an inspector, since they are at the latter's mercy.

I think that the object of the Harrison law is a good one, on the whole, but I want to show what harm it can work on an innocent man, should an inspector see fit to bully him.
"TEXAS."

VITIATION OF TYPHOID BLOOD TESTS AFTER PROPHYLACTIC VACCINATION

The existence of leukopenia and of an eosinophilia in suspected typhoid fever is of no diagnostic value if the patient has previously been vaccinated against that disease. This is shown by the investigations of F. Schneider, of Berlin (*Berlin. Klin. Woch.*, 1915, No. 15), who found that within a very few days after antityphoid vaccination (the third) in soldiers both the conditions of the blood mentioned are present, and that these continue for weeks or even months.

ANIMAL CHARCOAL AND IODINE FOR TYPHOID-CARRIERS

From a recent number of the *Bulletin* of the Chicago Department of Health, we learn that "Typhoid Mary" has come to Chicago. This much discussed and pitiable personage presents as peculiar a problem in this city as she has in New York. She is well, not sick at all, but she is a danger to every community in which she lives, especially

since her only occupation—the only trade that she knows—is that of cook.

The problem of dealing with the typhoid-carrier is not an easy one. Thus far science has not succeeded in discovering any method of treatment that will make these people safe to associate with; consequently, every suggestion that possibly may help to find such a remedy should be considered. Here, for instance, is one such:

Doctor Kalberlah, writing in the *Medizinische Klinik* for May 23, 1915, reports how he successfully cleared the stools of typhoid-bacilli in 5 such individuals, and the remedies employed by him were animal charcoal and tincture of iodine. Readers of this journal will remember that we have printed a number of abstracts from our German exchanges showing the vogue now enjoyed by animal-charcoal for curing all kinds of gastrointestinal affections. In the case of typhoid-carriers, however, Kalberlah shows that animal charcoal alone is not sufficient to rid them of their infesting parasites, but a teaspoonful of this substance, taken from three to five times a day, and at the same time from 7 to 15 drops of tincture of iodine in a glass of water after eating, and at the same intervals, proved effective in every instance.

We hope that some of our readers who have cases of this kind will experiment along these lines and make report on the outcome. No harm can come from such a course, while success would be a boon. Only, one must make sure of the quality (U. S. P.) of the animal charcoal from a responsible manufacturer, and procured freshly, in original sealed container, from a jobber.

ABORTIVE TREATMENT OF GONORRHEA

Without reference in this place as to the period when abortive treatment of gonorrheal urethritis still may prove effective, Carl Bruck, in an exhaustive treatise on the subject, describes (in *Ther. Monatsh.*, Jan., 1913) a method of aborting gonorrhea that has given satisfactory results in Neisser's clinic for genitourinary diseases. Proceed as follows:

Employ a Neisser syringe holding 12 mils and fill it with a 4-percent protargol solution to which 5 percent of antipyrin has been added, and make the injection in person. Do not remove the syringe immediately, but press it firmly in the meatus for five minutes, in order that the fossa may also be well bathed. Repeat this on the same day, and again,

twice, on the next, provided there is not too much irritation; but that is rare. Then await results. Spitzer proceeds similarly.

Bruck also mentions favorably Tomaszewski's abortive treatment: Place the patient on his back, spread the urethral lips, fill the fossa navicularis with a 2- or 3-percent solution of silver nitrate, or, with a protargol or hegonone solution of from 10 to 20 percent; repeating this several times. Then thoroughly swab the fossa and also the anterior urethra with a solution of hegonone, 1:3000, or of silver nitrate, 1:10,000 to 1:5000.

In the further course of the treatment, irrigations under pressure, with resultant expansion, are stated to deserve far greater attention than is being accorded them; the dilating irrigators of Wossidlo and of Dreuw being mentioned as serviceable.

EYE AFFECTIONS

At the Eye-Clinic at Gratz, R. Rauch (*Arch. f. Ophth.*; cf. *Ther. Monatsh.*, Aug., 1914) made use of the new mercuric preparation embarin in a case of luetic affection of the eye. Every other day he instilled into the gluteal muscle 1-2 to 1 mils of the preparation, making altogether 20 injections. Absorption was rapid, neither rise of temperature (as a rule) nor pain resulted, and the remedy was well borne; beneficial effects were promptly observable. Hygiene of the mouth and the appearance of toxic symptoms were not neglected.

VINCENT'S ANGINA

Vincent's angina, otherwise known as pseudomembranous angina and as ulcerative tonsillitis, is a rather uncommon disease of the throat, the nature of which is probably unrecognized in a large percentage of cases. In many instances, it is diagnosed as diphtheria; more rarely, as syphilis. It usually occurs in childhood, but is occasionally seen in adults.

Vincent, who originally described this disease, found two organisms, believed to be specific, one a fusiform bacillus, the other, a spirillum.

According to A. G. De Sanctis (*N. Y. Med. Jour.* Nov. 6, 1915, p. 953), there is a possibility that cancrum oris and Vincent's angina are closely allied, having a common etiologic cause, the latter disease, however, being much milder than the former. If the throat of a person suffering from Vincent's angina be examined, a false membrane will be found,

usually upon the upper portion of the tonsil. Occasionally the uvula, soft palate, cheeks, gums, and even the larynx may be attacked; but these sites are relatively uncommon. This false membrane is due to superficial necrosis of the mucous membrane; it is of a grayish-white, yellowish-green or dirty-brown color. When removed, it leaves behind a raw, bleeding, ulcerating surface. These ulcers vary from the size of a pea to a 25-cent piece, and they are from 1-8 to 1-2 inch deep, irregular in shape, and enclosed in red, inflamed areas.

The symptoms vary in severity. As a rule, there is a slight elevation of temperature, associated with headache, chilliness and general lassitude, together with occasional attacks of nausea and vomiting. Swallowing is painful, and in most cases the cervical and maxillary glands are enlarged, particularly on the side of the lesion.

Prognosis is good, unless the larynx happens to be involved. There is a tendency to chronicity, and the disease is likely to recur. According to De Sanctis, the disease is neither contagious nor infectious.

Treatment consists in the application of the ordinary antiseptics used in other forms of sore throat, such, for instance, as hydrogen peroxide, Seiler's solution, potassium chlorate, silver nitrate, and the like. Neosalvarsan has been applied locally to the lesions, with good results, and De Sanctis recommends its use.

[It seems to me that Doctor Dakin's new antiseptic, para toluene sodium sulphochloramide (Chlorazene) would give excellent service in this condition. Also, calcium sulphide should not be forgotten; push to saturation.—Ed.]

SPECIFIC TREATMENT OF TYPHOID FEVER WITH TYPHOID-BACTERIN

Goldschneider and Aust report having employed injections of the killed typhoid-bacteria in 57 moderately severe but uncomplicated cases of typhoid fever, the material being Marx's bacterin, 500 millions to the mils (Cc.) This was given in doses of 1-2 to 1 1-2 mils (Cc.) 'The authors describe (*Deut. Med. Woch.*, 1915, p. 361) their procedure and the course of the attacks, concluding their report with these observations: The subcutaneous injections cause fewer by-effects than in sound persons. The curative effect seems hardly worth noting. Inasmuch, however, as a certain influence upon the course of the

disease undoubtedly was observable, further trials with the bacterin do not seem without promise, but better results may, perhaps, be obtained by trying a small dose more frequently repeated.

A TREATMENT FOR PRURITUS ANI

One of the most damnable conditions, one that may be a veritable thorn in the flesh, is pruritus ani; an affection that all too often resists the most diverse and ingenious attempts on the part of the physician. In those cases in which the underlying cause of the pruritus can be determined, this objectionable complication usually will yield to appropriate treatment; but, in those reasonably frequent cases of so-called idiopathic pruritus, both physician and patient are likely to despair.

In the *Johns Hopkins Hospital Bulletin* for August, Dr. Harvey R. Stone reports on some experiments with dogs, in which alcohol injections were made in the anal region, for the purpose of determining the possibility of relieving, by this method, refractory cases of pruritus. It was found that alcohol injections will produce complete local anesthesia; however, if introduced deeply enough, so as to come in contact with the motor nerves, sphincter paralysis and resultant incontinence are produced by it. If the alcohol is introduced rather superficially—that is, within the skin itself—superficial sloughs are caused. Yet, it is quite possible, and not very difficult, to produce anesthesia without sphincter paralysis or skin ulceration resulting; this effect being brought about by introducing the needle through the skin, but injecting the alcohol immediately under the skin, and never more deeply.

On the strength of these experimental results, the method has been tried in the dispensary of the Johns Hopkins Hospital and in private practice in 17 cases, during a period covering less than two years. With the technic employed, not much pain is associated with the injection; some soreness is felt during the first twenty-four hours, but after that the only subjective sensation experienced is numbness. The itching is immediately abolished and the area injected is largely and sometimes completely anesthetized. Thus far, in no case has the slightest evidence of disturbance appeared in the action of the sphincter. There were several instances in which small superficial sloughs resulted, but these all healed promptly and without difficulty. They were caused by

faulty technic, in placing the alcohol too near the surface—a fault due to the careful avoidance of too deep an injection and to the fact that the folded, irregular surface of the skin about the anus renders it much more difficult to keep the injections at a uniform depth than would be the case were the surface level. How long this freedom from itching will last is not known. One patient has returned for a second injection, eight months after the first, for a recurrence of itching. All of the patients seemed much gratified by the results obtained, so far as it was possible to follow them.

The manner of injecting is quite simple. The area in which the itching is complained of is carefully noted from the patient's description; indeed, it usually is well marked out by its characteristic appearance. Under general or local anesthesia, the injection is then made so that this whole area is anesthetized. In nearly all the cases reported, a local anesthetic has been employed, this being usually novocain (1 percent) or quinine and urea hydrochloride (1 percent). This form of anesthesia has proven quite satisfactory.

The syringe is filled with alcohol (95 percent), the usual fine hypodermic needle being used for the injection. The needle is carried entirely through the skin, vertically, and then is inclined sharply to the side, so that it lies nearly parallel with the skin surface. When the needle is properly inserted into the subcutaneous fat, it can be moved fairly freely from side to side under the skin and can be felt moving by a finger placed over it. If this freedom of movement is lacking, the needle probably is engaged in the corium, and then, if injections are thus made, sloughs may be expected to result. With the needle properly placed, the whole area involved is injected, enough alcohol being used to underlay the area thoroughly. The injection may be carried up to the margin of the anus, but the author has never injected the anal canal itself, nor has he so far had reason to believe that this would have improved results. Of course, before any injection is made, the skin is cleaned as for any other operative procedure.

ELIMINATION OF METABOLIC PRODUCTS IN NEPHRITIS. INTRAVENOUS USE OF DIURETICS

Diuretics of the theobromine and theocine group not merely induce augmented excretion of water in nephritides, but these drugs cause increased elimination of nitrogenous

products of anabolism as well, according to P. Erdélyi (*Deut. Arch. f. Klin. Med.*, 1913, Jan. 16; through *Zentrabl. f. Bioch.*, 1913, No. 21). In addition sodium chloride also is more freely excreted.

For these reasons, the author advises resorting to these diuretics, in large dosage, in the earliest stages of nephritis, even though edema has not yet appeared, so as to obviate nitrogen accumulation. In order to secure speedy and effective results, the intravenous method is recommended as preferable.

The inanition usually preceding uremia is the cause, according to the author, of the increased appearance of ammoniac nitrogen in the urine; and this latter phenomenon he considers a premonitory sign of uremic attacks.

BACTERIN-TREATMENT OF CHRONIC INTESTINAL STASIS

In an interesting study of chronic intestinal stasis—or intestinal toxemia, as it is also known—G. R. Satterlee (*Amer. Jour. Med. Sciences*, Nov., 1916, p. 727) tells of some very interesting results obtained by the use of bacterins prepared from the prevailing type of colon-bacillus isolated from the patient's feces.

Doctor Satterlee injected from 25 to 50 million dead organisms as an initial dose, increasing gradually at from four- to seven-day intervals, the maximum dose being 300 million bacilli. After this treatment in typical cases of chronic intestinal toxemia, a reaction was experienced usually within twenty-four hours. This reaction consists in the appearance of a small, reddened, indurated area at the point of injection, slight headache, giddiness or nausea, increase of neuralgic or myalgic pain, and occasionally increased peristalsis. These symptoms are followed by marked relief within forty-eight hours.

Doctor Satterlee tells of some very promising results following this treatment. In one patient suffering from enteroptosis and chronic intestinal obstruction, with vomiting of duodenal contents, the bacterin-treatment checked the vomiting after ordinary methods had been tried and failed. Two other patients, needing, but refusing, operation for intestinal obstruction, have been kept on their feet. One of these suffered from adhesive appendicitis, the other (operated upon later) presented a strong band of adhesions across the ascending colon and adhesions between the uterus and rectum.

Another patient who for years had suffered from intestinal toxemia, with profound depression amounting to insanity, for two years, reacted violently to the coli-bacterin, and after a month and a half of treatment was able to leave the hospital in good mental condition.

Satterlee, of course, does not advise the use of bacterins as a substitute for indicated surgical intervention.

CARREL'S METHOD OF USING CHLORAZENE

Carrel is employing both Dakin's hypochlorite-solution and his newer antiseptic, the paratoluenesodiumsulphochloramide (chlorazene), in his remarkable and oft-described surgical work at Hospital 21, Compiègne, France. The former, being cheaper, is used more largely, but the latter is employed and recommended. (Cf. the article by Carrel and Hartmann, in *The Journal of Experimental Medicine* for Nov. 1, 1916, p. 430.)

In making applications of these antiseptics, Carrel endeavors to keep the entire infected wound surface moist with the solution. This he effects by means of intermittent currents forced into the utmost recesses of the wound through small red-rubber tubes, closed at the distal end, but having several small lateral holes for the escape of the liquid. In a narrow wound, one tube may suffice, but in a large wound with pockets several may be required. In fracture-cases, the ends of the tubes are placed among the fragments. These tubes are connected, by a branched glass arm, with a larger supply-tube attached to a glass reservoir. In the case of small wounds, the solution can be injected through the tubes with an ordinary glass syringe.

After the tubes are properly placed, they are supported by gauze packing, the surgeon assuring himself that the liquid can come into contact with every part of the lesion. The wounded part is surrounded by a cotton lined compress or bath-toweling, as a protective dressing.

Continuous irrigation is not practiced, but the solution is let into the wound at regular intervals (every two hours day and night), just enough being admitted to keep the inner dressing wet. Carrel employs Dakin's hypochlorite solution in 1-2-percent strength or one of 1 percent of paratoluenesodiumsulphochloramide (chlorazene). Since the two solutions have equal germicidal power, it is clear that with the chlorazene, in the concentration employed, a solution of much greater potency

is available. Yellow vaseline is smeared over the surrounding skin surface when the hypochlorite or a very concentrated chlorazene solution is employed to prevent irritation of sensitive skins.

It should be remembered that the hypochlorite may not be used in a solution more concentrated than 0.5 percent, stronger solutions invariably causing irritation. Also, the hypochlorite must be applied at shorter intervals, since its antiseptic action (while intense) is of less duration. In only one respect has the hypochlorite-solution any advantage—it breaks down necrotic tissue (if present) more rapidly than will the chlorazene. Under this treatment, the bacteria rapidly disappear from the wound and the rate of clinical improvement is remarkable.

The bacterial condition is determined from day to day by the microscopical examination of smears taken from different portions of the wound. As soon as all bacteria have disappeared, or there are only two in the field, Dakin applies dressings moistened with a 0.2-percent solution of chloramine (chlorazene), in order to maintain the aseptic state. He also uses, under certain conditions, a cream containing chlorazene in neutral sodium stearate. The parts are not brought together by sutures, but by broad adhesive strips, so made as to exert lateral pressure and thus close the deeper structures. Often these strips are provided with "hooks" and lacings permitting gradual closure and adjusted pressure.

When a wound has been rendered sterile in this way, it heals with wonderful rapidity, while under such uniform conditions it is possible to express the time of repair by a definite formula (devised by DuNouy, of the same hospital-staff) predicated upon the size of the wound and the patient's age.

Carrel's method of treating wounds is believed by many surgeons to be revolutionary. The introduction of chlorazene, solutions of which can be prepared in a few moments by any physician or nurse (to prepare the hypochlorite solutions requires hours and even days), has made the Carrel method available to anyone.

TREATMENT OF HEMORRHAGE WITH NORMAL BLOOD-SERUM

H. H. Forbes (*Ann. Otol., Rhin., & Laryng.*, Mar., 1916) states that an important point in operative work is that the prophylactic value of serotherapy is obtained in from twenty-four to forty-eight hours after the in-

jection, and that it persists for at least three weeks, sometimes lasting even for two or three months, when the blood will have been found to have again the former anomalies of coagulation.

In obtaining the serum, it has been observed that the specimen secured by centrifuging the blood is not as active as when allowed to clot in the test tube. Antitoxic serum has been used in some cases, with beneficial results. Human serum acts beneficially by protecting against anaphylaxis, no matter in what dose it is employed. However, direct transfusion from one person to another is fraught with certain dangers; especially is it desirable to ascertain that the serum of the giver does not agglutinate the red corpuscles of the recipient, or reversely. Horse-serum, which can be obtained in large amounts, seems to yield more uniformly satisfactory results than will any other animal-serum. Beef-serum has a tendency to induce anaphylactic symptoms, that is, chills and fever, cyanosis, vomiting, headache.

To obtain full therapeutic action, serum older than two days should not be used. Precipitated blood-serum, in the form of powder, has yielded good results in hemorrhages after tonsillectomies and turbinectomies.

TREATMENT OF EXOPHTHALMIC GOITER

Of the numerous remedies of value in the treatment of exophthalmic goiter, J. M. Anders (*N. Y. Med. Jour.*, Oct. 21, 1916, p. 773) says that two are worthy of careful consideration, these being quinine hydrobromide and antithyroidin, the latter obtained from the serum of thyroidectomized sheep. Anders endorses the statement of Elsner and Wiseman, that antithyroidin confers benefit, since it relieves the tachycardia, precordial distress, and tremor, while it also causes a reduction of the enlarged gland. It should be continued for from four to eight weeks, given at intervals of two to three months.

Anders speaks highly of the treatment with quinine hydrobromide, as proposed by Forchheimer. His custom has been to prescribe it in 5-grain capsules three times a day after food, later increasing to four doses of the same strength daily, if well borne. The remedy is to be continued until the subjective symptoms of tachycardia and tremor have disappeared, after which the doses are to be reduced until one is taken a day. Should active symptoms arise during this period of

withdrawal, the drug should be resumed in full doses at once.

Doctor Anders believes that the quinine hydrobromide antagonizes the hyperthyroidism, as a result of its vasoconstrictive action. However, this is accomplished in a slow and gradual manner; therefore, patients should be told that they must be prepared to take the remedy continuously for a period of months.

We may add that Forchheimer was accustomed to give ergotin in association with quinine hydrobromide. This method of treatment we know to be a very good one, having personal knowledge of a number of patients who have improved very decidedly under this method of treatment.

HOW TO LOCATE POINTS OF FOCAL INFECTION

Now, that we are beginning to believe that many of our chronic diseases are caused by focal infections, that is, the entrance of disease-organisms into the body at some point remote from the present site of the disease, it is of interest to know that it may be possible to locate the seat of the trouble by the diagnostic use of bacterins. As Noble P. Barnes points out (*N. Y. Med. Jour.*, Oct. 31, 1916, p. 779), one result of the injection of a very large dose of vaccine is, to cause inflammatory symptoms at the focal point, that is, the point of entry of the infection. For instance, if rheumatism is due to a primary tonsillar infection, the injection of the proper strain of the streptococcus will light up the tonsillar trouble as well as the rheumatic trouble. This fact may be important, especially when the original site of disease has become obscured.

Doctor Barnes illustrates this fact by telling of a case of gonorrheal arthritis which obstinately resisted treatment. Eventually he decided to give the patient an unusually large dose of the bacterin. The result was, that not only was the rheumatic trouble aroused, but he uncovered an unsuspected point of infection causing a most distressing epididymitis. In another case, a woman suffering from so-called "rheumatic gout" was shown, by the diagnostic bacterin test, to have a marked infection in the appendix; while still another patient, a woman suffering from a chronic polyarthritis and a bed invalid for over a year, was found by the bacterin test to have a gall-bladder infection.

Consequently, it is well for the physician to remember that bacterins not only possess

a therapeutic value, but also a diagnostic one. When used for the latter purpose, however, the dose must invariably be a large one, since reaction—and decided reaction—must be secured, to obtain information of value.

TYPHOID FEVER IN THE ARMY

At the meeting on medical preparedness held by the Chicago Medical Society, November 8, 1916, the statement was made that 146,000 United States soldiers had been located on the Texas border for about four months. The efficiency of the sanitary measures employed in this body is shown in the statement made by Col. Birmingham at Philadelphia on October 28, who said: "To date, there have been 14 cases of typhoid fever on the border, 3 in the regular army, and 11 in the militia."

When we remember that during the six months of the Spanish-American War 20,700 cases of typhoid fever occurred in our army, we get some little idea of what has been accomplished by our army medical officers during the last eighteen years. While the development of camp sanitation is responsible for much of this improvement, perhaps even more must be ascribed to the introduction of prophylactic vaccination.

COMMUNICABILITY OF POLIOMYELITIS

Some idea of the degree of communicability of poliomyelitis can be gained from a study of the following table, based upon reports of the first 7000 cases seen in the epidemic in New York City. We quote from the weekly *Bulletin* of the department of health of the city of New York:

	Families	Cases	Percent of Total Families
1 case in a family..	6521	6521	96.63
2 cases in a family..	205	410	3.04
3 cases in a family..	20	60	0.30
4 cases in a family..	1	4	0.014
5 cases in a family..	1	5	0.014
	6748	7000	99.98

"It is realized, of course, that this does not fully answer the question, for the figures do not indicate the number of children in each family. Thus, it might very well be that a large proportion of the families in which only one case occurred were families in which there was only one child. Further study of the problem is in progress in New York, and we hope soon to be able to give figures, including the number of children exposed in a family.

Miscellaneous Articles

An Indictment of Alcohol

I HAVE been deeply interested in the discussion by Doctor Bowers, in the July number, of the value of alcohol, together with the rejoinder by Doctor Thackeray (September issue, page 788), as also the comments by the editor. I, for my part, agree with nearly everything Doctor Bowers says in his masterly article, and I heartily endorse the statement that the proper place for alcohol is outside the body, not inside.

I have no doubt, of course, about Doctor Thackeray's being perfectly honest in his opinions and beliefs, even if he has been drinking alcohol ever since he was sixteen years of age; nevertheless, I want to remind him that opinions and beliefs are not knowledge and that his family-history proves nothing in the controversy about the proper place for alcohol.

I also object to the way he brings in his reference to the second chapter of the gospel of St. John. A careful reading of that chapter will plainly show that the servant filled the water-pots to the brim with *water*, and there was no alcohol in the wine that was served to the guests on that occasion.

I want to get into this discussion just far enough to say what I know about alcohol; not as a matter of opinion or belief, but from actual knowledge.

Alcohol is an anesthetic, "narcotic poison." Its chemical composition is C_2H_5OH plus death. In plain English language, 100 pounds of alcohol contain approximately 53 pounds of dead carbon, 13 pounds of hydrogen, and 34 pounds of oxygen. It is a product of death and decomposition. A true hydrocarbon cannot by any possibility become a food, and from the moment it leaves the wine-press, the brewers' tub, or drips from the poisoned copper worm of the distillery, alcohol is an anesthetic, narcotic poison and gets in its deadly work on the carbon compounds of the body.

Carbon is the chief organic element in the human body, and the life-principle in man is contained very largely in his blood, nerves,

and brain. These are the albumins and albuminoids of the body, and in them we always find five simple biogenetic elements, viz.: carbon, hydrogen, nitrogen, oxygen, and sulphur. The greatest peculiarity about these carbon compounds is that they are very unstable as regards weight—the five original biogenetic elements varying as much as from 51 to 54 percent of carbon; 21 to 23 percent of oxygen; 15 to 17 percent of nitrogen; 6 to 7 percent of hydrogen; and 1 to 2 percent of sulphur. The disposition of the atoms in the molecule is very complicated and is constantly undergoing changes in varying conditions of health, and still greater changes in disease.

It is not my purpose to go into this phase at this time. What I want to establish is the fact that the albumin-molecule is very complicated and at the same time very unstable; that is to say, very easily altered. Now bear in mind that the albumins contain 53 percent of *living carbon*, and that alcohol contains 53 percent of *dead carbon*. And now follow me closely:

When a man drinks an alcoholic beverage, the alcohol in it is absorbed, undigested and unchanged, into his blood, nerves, and brain as alcohol. The first effect is that of an anesthetic, thus producing that sense of well-being that is so often mistaken for stimulation. The second effect is that of a narcotic. The third effect that of a toxin, or poison.

A large portion of the alcohol is eliminated through the lungs, in the form of alcoholic vapor. Another portion is oxidized, converted into an aldehyde (C_2H_4O), then into an acetic acid ($C_2H_4O_2$), then into other forms, and finally is eliminated through the intestines. But a portion of the alcohol—and this is by far the most dangerous portion—is split up by the disassociation of its atoms. The hydrogen is converted into carbureted hydrogen, the poisonous radical of alcohol; the oxygen is burned up; while the atom of dead carbon, because of its affinity for the atom of living carbon in the molecule of al-

bumin, attaches itself to that. Constant repetition of this process, as a result of steady drinking, alters the composition of the albumin-molecule to such an extent that in all indulging in the daily consumption of alcohol we find, instead of 53 percent of living carbon in the molecule, there is only 50 percent, while there is 3 percent of dead carbon. Add to this 3 percent of dead carbon in the blood, nerves, and brain of the victim, a congestion of the mucus membranes of the stomach and intestines, a congestion of the liver and kidneys, and [increase of connective tissue, poisoning of the blood, hardening of the nerves and brain, insomnia, craving for more alcohol, overworked vital organs, loss of will power, deranged and disordered metabolism, and you have a fairly correct picture of the man who drinks alcoholics habitually.

If all men were alike, all men who drink alcoholic beverages would become drunkards. The man whose percentage of carbon in the various compounds of the body is at par seldom acquires an uncontrollable appetite for alcoholic beverages, but the man whose percentage of carbon in these compounds is below par always acquires an irresistible craving for alcohol. That is the reason why some men become drunkards, while others, under the same circumstances, do not.

The man who drinks "pays." Man-made laws are not always enforced, but nature's statutes against intemperance are always enforced to the letter. Degradation, poverty, insanity, premature death, and no hope of a resurrection are some of the penalties nature exacts for drunkenness.

What is drunkenness? How much whisky must a man drink before he becomes a drunkard? How many drinks make a drunkard?

How about the man who drinks whisky daily for sixty years? You may say that man will forever be what he makes himself; that his follies, vices, and sins are his own. From the awful responsibility for himself he cannot escape. Suicide cannot kill him; death cannot destroy him; no ritual, ceremony, fasting, confession or repentance; no imploration or sacrifice to the gods can save him; he has no friend at court, no attorney to appear for him; and if he dies a drunkard he alone is responsible, and he goes out into the great unchartered Saragossa Sea of lost souls, with the awful sentence ringing in his ears, "No drunkard shall inherit the kingdom of heaven."

But, how about the physician who care-

lessly or deliberately prescribed alcoholics for that man, thereby starting him on the road to perdition? Who is responsible?

GEO. D. SWAINE.

Cleveland, Ohio.

ZONE-THERAPY. ALSO, SPECULATIONS ON LIFE

In the February issue (page 176), Dr. Edwin F. Bowers gives an interesting account of the Fitzgerald method of painless labor, which, if it will stand the test of the furnace of experience, should almost revolutionize the practice of obstetrics. However, like the editor, I am skeptical; still, I like the spirit displayed by Doctor Bowers, showing, as it does, a willingness to investigate any avenue of thought that promises even a possibility of reward for the time and energy expended, in the relief of suffering.

I suggest that the editor request Doctor Bowers or someone who has given thought to this subject to give us a complete outline of the subject of zone-therapy, with diagram if possible. It will do us good to investigate, without prejudice, some of the things about which we are inclined to skepticism.

And that reminds me of a previous article, by the same author, in the September, 1915, issue, page 842, entitled, "Explaining the Unaccountable," in which I was much interested. It would be time well spent to reread that paper, as well as the excellent editorial comment on it, in the November issue, page 993.

It is only a step from physical to metaphysical, from physician to metaphysician; and no class of men is better qualified to investigate the metaphysical than are physicians. Indeed, I expected to see many comments, favorable and unfavorable, upon Doctor Bowers' hypothesis regarding health and disease being simply normal or abnormal states of vibratory motion. When such a hypothesis has the support of such scientists as Sir Oliver Lodge and Sir William Crooks, it may be considered as elevated to the dignity of a theory.

I have been reading and thinking along similar lines, and was very glad to see this article published in our journal and to note the very favorable comments by the editor.

There are several points in that paper that I want to see discussed, if it may be brought up under the head of "unfinished business."

Without wishing to be called upon for a definition of "life," it is frequently considered as equivalent to "spirit," and, as such, ap-

pears as the *opposite of matter*. If there is vibration, there must be something to vibrate, and that something is *matter* in some form. So, I should not say with Doctor Bowers, that "life itself is perhaps a species of vibration," but, rather, that vibration is the *manifestation of life or spirit on form or matter*.

Doctor Bowers' idea is unitarian, while I believe in the trinity of spirit, matter, and the relation subsisting between the two, which latter is vibration, or action.

He may have the courage to say that these are the three aspects of the one ultimate cause. Then I should be tempted to join his church, at least as a probationer.

The suggestion that people are attracted to each other whose vibrations are harmonious is very plausible, and I should not even except the element of "sex-attraction," but would include that in the same cause, namely, synchronous vibrations. Indeed, sex-attraction is as natural a result as the action of two tuning-forks or two wireless instruments that are "in tune" with each other. So, if we ignore the idea of reincarnation and of intimate association in former lives, I think that "harmonious vibration" covers practically the whole subject. When cells and electrons vibrate normally, there can be no *locus minoris resistentia*, and, therefore, no disease can gain a footing.

The "cleanout, cleanup, and keep-clean" practice is a rational means of attaining and maintaining normal vibration—health. Doctor Neiswanger, of Chicago, has ardently supported the vibration-idea as applied to chronic nephritis and has put his belief to practical test by treating, and curing, many cases of this disease by means of static electricity.

I have followed the treatment, as given in his book, "Electrotherapeutical Practice," in a number of cases of undoubted chronic nephritis, with very happy results in every case.

All nature has its periods of activity and rest, its day and night, its summer and winter, which are merely the alternating current of nature from positive to negative, from action to quiescence.

Life and (so-called) death are the ebb and flow of cosmic energy; and as truly a vibration as that of the pendulum.

The great law of opposites, that "*action and reaction are equal and opposite*," is as applicable to the metaphysical as to the physical; and, if we are to get an idea of the Final Cause, we must endeavor to transcend time

and space and make our observations from His viewpoint.

L. J. COBERLY.

Oakesdale, Wash.

IPECAC IN TYPHOID FEVER

During the past few months I have made use of ipecac in all of my cases of typhoid fever and I am virtually sure that in every instance it has had a decidedly beneficial effect. Heretofore our textbooks have called ipecac an emetic, expectorant, and diaphoretic; but now, with the additional light thrown upon its physiologic and therapeutic actions, during the past few years, we must also ascribe to it a prominent place among the hepatic stimulants and the remedies controlling hemorrhage, especially of the lungs. Its alkaloid emetine is said to be specific in all cases of amebic dysentery, while in bacillary dysentery, according to my experience with it in an epidemic of unusual severity, recently, it has a more definite action than any other drug I am familiar with.

The use of ipecac formerly appears to have been limited to cases of croup and poisoning—in other words, it was used almost exclusively for its emetic effect. Being an old-fashioned drug, its many other valuable uses were, apparently, overlooked by medical men, in their search for newfangled remedies.

I was led to its use in typhoid fever by the very excellent results I had obtained from its administration as an intestinal antiseptic in hepatic engorgement from colds, also in toxemias, especially of children. My cases of typhoid fever have, perhaps, not been of sufficient number to render the evidence conclusive; however, I had definite clinical evidence bearing out the following therapeutic actions of ipecac in this disease: decided diminution of the tympanites, lowering of temperature, absence of delirium, return to absolutely normal temperature usually in two weeks from the onset of the attack. Complications of any serious nature have not been observed. In one case there occurred phlebitis, or fever-leg, but only in a mild form.

I have always administered a urinary antiseptic in typhoid fever, and deem it essential. The form of ipecac used by me has been the powder, in combination with small doses of calomel and bismuth, given, just short of nausea, for several hours daily or every other day, and usually followed by the administration of castor-oil. The patient sometimes will be slightly nauseated for a short while, but this generally lasts but a very short time.

I have yet to see any unfavorable symptoms from this line of treatment; only in some cases it appeared to cause a diminution of the excretion by the kidneys and to render the urine more irritating.

H. W. SMELTZER.

Greendale, Va.

[Be sure to read the next article, also dealing with this topic.—Ed.]

EMETINE AND IPECAC COMBINATION IN TYPHOID FEVER

During last July, it was my apparent misfortune to have under my care two cases of true typhoid fever. Both these patients were rather past the prime of life and had, in years gone by, suffered from repeated attacks of nephritis. Specimens of their urine contained a lot of kidney debris and a large percentage of albumin, and were of light specific gravity. The face, hands, and lower limbs were bloated; there was uremic headache, temperatures ranging from 101 in the forenoon to 104 degrees in the afternoon, meteorism, delirium, and a pulse rate of from 90 to 120. It was in the beginning of the third week in one and of the third week in the other.

I had just been having most excellent results with typhoid phylacogen, but, on account of kidney complications, this specific was debarred in these two cases. So, it was up to the doctor to do something out of the ordinary quickly, or quite likely lose two good people and patients intrusting into his hands their life and health. I put them on an as aggressive antinephritic treatment as was possible, remembering the ulcerated bowels and powerful toxins pervading their bodies.

After thinking over this complicated problem in pathology, during the evening, finally a, to me, satisfactory conclusion was reached. I visited the patients early next morning, gave each, hypodermatically, 1-2 grain of emetine, ordered the nurse to give two alcresta ipecac tablets three times daily (not near the time of feeding or of taking alcohol), one small dose of castor-oil daily, and prescribed an absolute, measured liquid diet. Six days of this treatment found both of my patients free from fever and their kidneys much better. Recovery from then on proceeded uneventfully.

There was no nausea or bowel trouble after beginning this treatment. The patients felt better and better with each day; the temperature dropped about one degree daily, till

it was normal on the sixth day, and so it continued.

Since then, I have had under this treatment 7 unmistakable, tested cases of typhoid fever, typical in every particular, and they were found normal on the morning of the sixth day, and had no relapse. I have had 5 others, not so typical clinically nor by the three tests, but, summing them up in every particular, after discharging them, there was no doubt in my mind as to the diagnosis.

These last 5 patients responded in like manner to the same treatment, except the third, whose temperature did not become entirely normal before the eighth day.

Recently, I have had two more patients, who came to my office for seven days, to receive hypodermic injections of emetine, they carrying out the other part of above treatment, too. They were free on the evening of fifth day of treatment, but, for fear of return, I gave them emetine two days longer. This forenoon I have just discharged a typical case, fever-free on the evening of the sixth day. Same treatment.

So, it would seem that the simultaneous administration of emetine, the active principle of ipecac, hypodermically, and of alcresta ipecac tablets internally, will inhibit the development and propagation, not only of the bacillus typhosus, but of that of the paratyphoid germs A and B as well; to such an extent, that is to say, as to abort the disease in its beginning and stop it in nearly the same number of days, even after the germ and its toxins have the whole system under their full sway and control.

O yes, I know that there is an old saying about one swallow not making summer; still, sixteen or eighteen of them in a bunch make noise enough like springtime on hand to be worth our close attention.

I have tried emetine alone, also alcresta alone, and both influence typhoid fever favorably; still, neither given alone produced the marked and satisfactory specific effects here described.

In none of the cases has there been observed the least untoward effect, except for a slight transient soreness of the arm where the hypodermic was given, but this was easily dissipated by means of ordinary antiphlogistic measures.

Thinking that a brief account of these 18 cases, with this unusual and most satisfactory curative effect of the combined administration of the two forms of our new-old therapeutic friend may interest your readers, that some be induced thereby to try it and

prove its efficiency quickly, is my reason for asking you to give it space in your most valued medical periodical.

S. H. HOWARD.

Jackson, Miss.

[Since we published in CLINICAL MEDICINE (See issue of May, 1915, p. 453.) an abstract of Frazier's article, originally printed in *The Medical Record*, describing the remarkable results obtained in 82 cases of typhoid fever treated with hypodermic injections of emetine, we have received several reports of experience with the method, modified variously to suit the needs or practice of the several reporting physicians. In the main, our correspondents have been greatly pleased with the emetine treatment. During the meeting of the Clinical Congress of Surgeons, at Philadelphia, I had a very interesting interview with Doctor Glasser, of Williamsport, Pennsylvania, who is treating his typhoid-fever patients with the emetine-injections in a large general hospital where it is possible to determine the diagnosis accurately and measure the results. He praises the method highly.

Frazier depends exclusively upon emetine hydrochloride, which is given to adults in 1-2-grain doses subcutaneously, two to four times daily. The bowels are kept clean. His cases, as a rule, clear up inside of six days. The associated use of the sulphocarbolates seems to us desirable—indeed, it is well-nigh imperative. Typhoid bacterin is a valuable addition to the treatment. Can any of our readers contribute further to this discussion?—Ed.]

RESORTS FOR HAY-FEVER VICTIMS

Having had attacks of hay-fever, this annoying trouble, for the last ten years, but also having enjoyed unusual opportunities for visiting various hay-fever resorts, I am going to tell what my experience has been. The first place that I visited was Petoskey, and this locality proved entirely satisfactory, as also did other places north of that city, as for instance Mackinac and the Snow Islands. Residence at Muskoka Lake was very beneficial and also at the north shore of Lake Superior, especially what is known as the Nippigon region. Minnesota Point gave fair relief, but not Duluth. That portion of Canada south of Muskoka Lake did not afford relief, nor did Rochester, Minnesota, or the valley of the Red River of the North up to Winnipeg. The Rocky Mountain range and

the Pacific Coast, from the Mexican border to Alaska, was free from this trouble, although in some of the alkali plains of the West much rhinitis developed. During extensive traveling in Europe, Asia, and Africa, I had no attacks of hay-fever, so, also, neither in Australia, New Zealand, or the Samoan and Hawaiian Islands.

This last season I determined to investigate new places and, so, turned my face south. Roan Mountain, Tennessee—in that corner of the mountains near Kentucky, Virginia, and North Carolina—I found a good old-fashioned comfortable place, the village being situated 3000 feet up and the mountain top 6000 feet. At Cranberry and at Elk Park, I was relieved. They are just over the North Carolina line. At Asheville, I found relief, while at Waynesville, only a short distance from there and of the same elevation, I suffered much. This was because Asheville cut the weeds and Waynesville did not. At Eagles Nest, five miles from Waynesville and in full view of it, relief was found. This was due to the greater elevation—5000 feet. Mount Mitchell and Balsam were good, for the same reason.

As I went further south, the corn in the fields became poorer, the cotton better, and the ragweeds scarcer; likewise my hay-fever became more rare. I visited seaside resorts all along the coast, and, in addition to remarkably fine beaches and bathing, found relief from hay-fever. This was so on Palm Island, off Charleston, South Carolina, and in full sight of forts Sumter and Moultrie. Tybee Beach, at Savannah, Pablo Beach, at Jacksonville, North Beach, at St. Augustine, Daytona, Palm Beach, Miami, and Key West. I took a trip, by boat, into the Florida Everglades and, besides visiting a very interesting country, found this region free from hay-fever.

Crossing over to Cuba, I found that island not only very happy and prosperous, but also free from hay-fever, and Havana free from mosquitoes and contagious diseases in September. The Canal Zone I also found free, as I always have found the tropics.

I hope that I have pointed out to some weary hay-fever sufferer some new place to go to if he has tired of the old, or a nearer or less expensive one than he has formerly patronized. I hope also that I may induce some of our northern people to go south and become acquainted with the delightful climate and people there.

Cincinnati, O.

E. S. McKEE.

[Since receiving this little article, which was sent us by Doctor McKee just on the eve

of his departure for a long, leisurely trip through South America, we have heard the sad news of his sudden death, in Ecuador. For three or four years Doctor McKee had spent most of his time in traveling, completing a trip around the world soon after the outbreak of the European war. We have on hand several brief articles from his pen, which will be printed later.—Ed.]

ABOUT SHEPHERD'S-PURSE AND BURSAL

The writer recalls how, when he was a schoolboy, in the '60s, his father, a country doctor near Chicago, first learned about the shepherd's-purse as a remedial agent. The Doctor had been treating a farmer's wife for uterine bleeding, but all the approved remedies failed to do good. Finally, at one call, the woman told him that she was cured. Another woman had told her to drink an infusion of a certain herb, and this plant, when pointed out to the doctor, was recognized as the common *capsella bursa pastoris*. After that, he gathered the weed and always kept on hand a supply of it, and, presumably, found it a satisfactory addition to his *materia medica*. A few years later, he found that Parke, Davis & Co. had put on the market a fluid extract of this drug; which, it seems, attained a certain vogue. When subsequently the present writer entered the drug business as an apprentice, he learned that this herb once had been popular in Teutonic Europe, but had been put in the discard, because the crude chemistry of that period had "failed to discover in it an active principle."

The history of this little "innocent" herb should point a lesson, since it is paralleled by that of other useful remedies, and one cannot fail to think of *cactus grandiflorus* (which by the way, this writer's father also used from the time of its first introduction, as also has the writer personally). Just now, *carduus benedictus*—the *blessed* thistle—is in the popular eye (at least in Chicago), and one wonders with what right all those "famous" pharmacologists categorically condemn that plant, when they cannot prove positively that its once great vogue rested upon nothing but a mere delusion. Those so positive "experts" seem to arrogate a great responsibility. But, to the subject.

Of late, a German firm has introduced a powdered dry extract of shepherd's-purse, prepared by a patented process, and supposed to contain all the active constituents

of the herb. It is marketed under the copyrighted name of bursal. A. Groeber, of the Pharmacologic Institute of the University of Berlin, has been devoting some attention to this preparation and has reported his findings in the *Therapeutische Monatshefte* (1915, p. 256).

In this paper, the author first points out that Dioscorides and Pliny extolled its numerous virtues under the name of *thlaspi*. Later, the plant was discussed at length by Tabernæmontanus (who died in 1590) in his "*Neu Kraeuterbuch*." However, the plant fell into neglect again—after Tabernæmontanus had resurrected it in his time—toward the close of the 18th century. It would really be interesting to repeat here all the virtues ascribed to this plant; however, the prominent and constant one mentioned was that of its power to check the flow of blood, whether employed internally or locally.

This subject has been treated at some length by Theodor Husemann, in the *Pharmazeutische Zeitung* of 1888, page 91. This historical sketch, however, was but an addendum to an article contributed to the same journal (*l.c.*, p. 53 and p. 151) by E. Bombelon, which dealt with the chemistry of the plant. The Frenchman succeeded in isolating an organic acid—*bursic acid*—and an alkaloid, *bursine*, which latter he obtained in the form of the hydrochloride. This principle he pronounced to be a thiocyanic compound, similar to or identical with sulphocyanasinapin. (See U. S. Dispensatory.) While no pharmacologic studies appear to have been instituted, Bombelon recommended giving a strong infusion of the whole herb in doses of one or two teaspoonfuls; Husemann, in this connection, raised the question whether the allylsinapis oil present in the seed-capsules might not be a contributing element in the therapeutic results.

Just how the fluid extract of shepherd's-purse happened to be brought to the attention of the American doctors at that time has always puzzled this writer—possibly there may have been some connection between this fact and the publication of the foregoing articles. Or did American "herb-doctors" give the impetus? Possibly some oldtime reader or pharmaceutical chemist can supply the answer.

The author in question, Docent A. Groeber, has been unable to discover any literature indicating that any pharmacologic study of this drug ever has been made, and, so, he undertook to investigate the action of the dry extract offered under the name of bursal, and

to which the manufacturer ascribes properties similar to those of ergot.

For the purpose of determining the influence of the bursal upon the womb, he utilized the still vitalized detached virginal uterus of the cavy. The organ was suspended, according to customary practice, in 30 mls (Cc.) of Tyrode nutrient fluid at 38° to 39° C., and, after the organ had been exhibiting normal activity for a while, measured amounts of a 2-percent bursal-solution were introduced.

The author presents reproductions of 5 tracings of the contractile behavior of the uterus under the influence of the agent, and the curves are remarkable and pronounced ones, but his textual comment is meagre.

The results differed for each animal, and varied with the amount of the drug added to the liquid. In part, merely a marked augmentation of the normal single contractions was produced; but usually the curve first rose abruptly and almost perpendicularly, then, after a slight drop, would maintain for a more or less prolonged period an elevation much above normal. At the same time, the single movements showed a rise below normal and sometimes disappeared entirely. Thus, the author remarks, we here have a tetanic contraction of the uterus. After thoroughly cleansing the uterus with Tyrode solution, it gradually recovers and returns to normal activity when again placed into fresh nutrient fluid.

All in all, Groeber adds, the action of bursal upon the isolated cavy-uterus resembles that of *secale cornutum*. It is worthy of note, in this connection, that a considerable concentration of the drug-solution was required to secure these results, namely, 1 : 300 in most of the experiments. While this points to relatively little activity, nevertheless the author considers his results of sufficient importance to warrant clinical experimentation, particularly in view of "the constant reappearance of the assertion that the oldtime popular remedy exerts an influence upon the womb." He adds that Husemann's suggestion anent the possible role played by the allylsinapis-oil may have some truth in it.

The author, using cats, also endeavored to learn whether the drug has any influence upon blood pressure. However, in no manner of administration was there any action, except when introduced direct into the veins, when the pressure was lowered; but this he attributes to the presence of potassium compounds in the plant. No untoward effects, either, could be observed, even after large

doses, when given by stomach. The intravenous route would be dangerous, potassium-poisoning being possible.

A. G. VOGELER.

Chicago, Ill.

PALACIOS

Along about the close of the Civil War, three brothers came, with their herds, to the part of Texas where I am penning these lines, and, finding the lush pasturage to the liking of the cattle, they settled permanently. On the long stretch of land known as Matagorda Point, they built houses, which, standing out prominently from the landscape, to the passing voyager on the Gulf looked so huge that they received the name of Tres Palacios—the Three Palaces.

Half a century later prospectors came, seeking a location for a Texas watering-place, a sort of Mexican-Gulf Atlantic City. This spot they found on the north shore of Tres Palacios Bay. This sheet of water stretches two miles across to Matagorda Point, which latter extends some miles south, then comes the bay, and then again a neck of sand dunes that separates the bay from the open gulf at a distance of ten miles from this town. Amply protected against all gulf storms, with salt-water bathing all the year around, open prairies extending for miles round about, a soil the most fertile on earth, a climate where every fruit, from apples to bananas, may be raised and gardens made in any month in the year, and the prevailing temperature never either very hot or very cold, Palacios (accent on the third) certainly seemed ideal.

So, a town was laid out and advertised, and people—several thousands of them—came, and they built themselves homes, and planted orange-groves and fig-orchards. The Baptist Young People's Union laid out association grounds and began to hold a sort of Chautauqua each summer; also it built a college. The young town bonded itself to the limit and erected schools and other modern improvements. Palacios began to be "some" resort. People from the interior Texas towns came hitherward to avoid the blistering heat of summer, others flocked here from the northern regions in order to escape the winter's chilling blasts.

The Satsuma orange proved resistant to whatever cold spells happened to befall, while the crops of cotton, rice, cane, melons, and garden-truck maturing in the strong clay soil were phenomenal. Packing-houses rose, to

care for the delicious figs. The briny water of the bay teemed with every variety of fish, from the lordly tarpon down, and the crabs, shrimp, oysters—say, brother, just come down and try these oysters, and you will stop talking about bluepoints. A number of small industries arose and prospered, and the town-magnates sat down and began to study European tours and to plan the investment of their swelling profits.

Then came the terrible storms that swept the gulf coasts and revived the memories of the Galveston disaster. Palacios folk just smiled and sat back comfortably—no storm ever bothered Palacios. Unfortunately, they forgot that the rest of the country did not know this fact and that the people depended upon the newspapers for information. And none of the papers ever thought of mentioning the immunity of Palacios from those tornados. So, the northern people went elsewhere to spend the winters—to well-advertised Florida, mainly, or to the great exhibitions in California. Fewer Southerners came to the coast for the summer season. Palacios began to retrograde.

Today, half of the shops are vacant, houses are to be had for very low rents, and people are leaving, to find homes where they can make a living. Farm values are there, but prices have gone down.

Palacios should have jumped in and advertised far and wide when the safety of its location was so plainly manifested. The town missed its opportunity. I have been unable to find a solitary instance of an application for storm damages having been made to any of the insurance companies during the last ten years, that is, since the founding of the town. Gulfport was "devastated"—in the newspapers—by a storm a short time ago, but all the damages that were applied for amounted to just \$1500. I have seen more than one hundred times more damage done at Atlantic City by a high tide, the shops and cottages piled in confused heaps, like the debris of a shoestore after a Saturday-night's sale; yet, not a line about it appeared in any paper west of Philadelphia. And, so far from deterring visitors, thousands rushed there to see the spectacle.

At present? Palacios is clean, well laid out, has good shell streets, and there are automobile-roads extending to Houston and beyond. The schools are excellent, the water from artesian wells is absolutely protected and pure, there is here neither any typhoid fever nor malaria. The fishing is very fine; quails abound by the million; duck and goose

shooting is said to be good; even larger game is to be found within reasonable distance.

This is a prairie country, and at first the absence of trees seemed objectionable—yet, one is relieved of the cost of clearing and can plant what trees we want, when we want and just where we want to. Growth is marvelous—our boy set out Satsuma oranges in January of 1915, and they are bearing fruit now. We are ordering for our small place these oranges, lemons, grapefruit, figs, pecans, pomegranates, Japanese persimmons, grapes, apples, plums, peaches, pears, all of which we see grown successfully here. One orange-orchard is expected to pay its owner \$1000 an acre this season. We intend to set out our kitchen-garden in November. In fact, it will require about five acres to accommodate all we want to plant. Vegetables are so easily grown that nobody has gone in for truck raising yet. Jersey milk of the best quality is plentiful; eggs and butter are good and cheap.

The people are largely from the North. There are no negroes, except a few transient workers. No liquor. Many churches. Good beginning of a public library. Several hotels, with good reputation for cookery. Ice and electric lighting furnished by the same company.

The natural resources of this locality are great, but not yet delimited. There is a large output of petroleum within fifty miles from here, while the largest sulphur-mine in the world is only forty miles away. A railway connects with Houston and the Intercoastal waterway canal with Galveston.

Pests? When thinking of Texas, we, naturally, think of rattlesnakes, centipedes, scorpions, tarantulas—but, the only pests we have yet seen are red ants, and they are not as troublesome as they are in Muskegon.

This is our first visit to Palacios. So far, we are well pleased, enough to contemplate making it our winter home, as Muskegon is our summer resort. Still, we are waiting for further experience, and this will be faithfully recorded. Land is very low just now, and, if anybody believes that a region of such remarkable fertility and range of productiveness can be kept out of the hands of the land-hungry American people much longer, we should like to hear his reasons. Within ten years, the farms that are now offered at \$50 an acre will be considered mighty cheap at five times this amount. The land is worth that much now.

Postscriptum, November 9.—One of those dreaded northers came in, and we started a

little fire in the stove for the first time this season. We cannot find that one-cent's worth of damage has been done in Palacios—but today we did hear that the wind blew the roof off our Michigan resort cottage! It gets quite hot here at midday, but the nights are cool. The air is bracing and work is a pleasure here. We had green corn on the cob, of excellent quality, for dinner today. The norther blew in many ducks and geese.

If any reader is looking for a place to send a delicate relative for the winter or feels like taking a vacation where fishing and shooting are worth while, I shall be glad to hear from him.

WILLIAM F. WAUGH.

Palacios, Tex.

WHITE SKIN VS. BLACK SKIN IN THE TROPICS

For years the public has inquired of the medical profession, Why does the heat of tropical climates affect white-skinned people adversely, more than it does the black-skinned? There has never been any explanation of it, to my knowledge, except that the actinic rays of the sun are supposed to be rendered inert by dark color and thus prevented from doing harm. Our army at one time adopted dark underclothing for the soldiers, according to this idea, but it was found to be a failure and discontinued.

The following hypothesis is based upon entirely different biochemical facts and certain experiments indicate that it may be put to practical use by persons living in hot climates; at any rate, it is a rational answer to the public's inquiry.

In U. S. P. H. S., Hyg. Lab. Bulletin No. 59 we find the following: "Probably wherever melanotic pigments occur in the living tissues of the lower and higher animals, they originate as the result of the action of appropriate enzymes on substances of aromatic nature." (p. 71.) "Tyrosinase is responsible for the production of cutaneous pigments in man and animals." (p. 72.) "Only substances containing phenolic hydroxyl are oxidized by tyrosinase." (p. 83.) "A peculiarity of the tyrosinase contained in the skins of animals is, that it only acts upon tyrosin in the presence of small amounts of iron." (p. 73.) "It has been shown experimentally that certain iron salts accelerate biological oxidations." (p. 123.) "Floyd found nearly twice as much ash in the skin of the negro as in that of whites, and nearly

twice as much iron in the ash of the negro's skin as in the ash of whites." (p. 123.)

Now, the application of the above facts to people and climate is, that during long hot periods of time the superficial capillaries of the body are continuously dilated. This dilatation withdraws considerable blood from the internal organs (liver, kidneys, etc.) whose function it is to extract amino-acid waste products from the blood, for excretion. In turn, withdrawal of blood from the internal organs causes them to become sluggish, and we have the so-called "torpid liver," with gradual waste-product accumulation in the system. During cold weather, this superficial capillary dilatation does not take place to any great extent, consequently the internal organs receive blood in greater abundance and they are stimulated to greater elimination of waste.

The difference between dark and white skins is, probably, of little moment during cold weather, because the capillaries are contracted in both and the internal organs are active; however, in hot climates, nature has provided the black skin with four times as much iron for oxidative processes as the white skin and, consequently, it takes from the blood of the black four times as much waste as is taken from the white.

Waste is oxidized into pigment and is continually gotten rid of by erosion of the superficial layers of skin. Thus, we find the reason why people of white races have an unequal chance with people of dark races, from the standpoint of health, in hot countries.

I believe these facts have an important bearing upon the difference of susceptibility to pellagra in whites and blacks. Pellagra is coming more and more to be considered an acid intoxication, and, if negroes are able to excrete toxins in large amounts by the skin, certainly these poisons fail to accumulate as rapidly as they otherwise would. The greater prevalence of pellagra in hot climates also may be accounted for in this way, the kidneys and liver being less active than in colder climates.

GEO. D. FAIRBANKS.

Brownsville, Tex.

ANOTHER LETTER FROM DOCTOR HOLLMAN

After the appearance of my last communication in the October number of *CLINICAL MEDICINE*, I paid a visit to the office of this journal.

The Mosquitia, as I have written, is a very fertile country, but that very quality makes

necessary more than common efforts to render the land subservient to man; for, its very fertility, so desirable to us, has produced a tremendous growth of jungle and forest, and this must be cleared away. The sturdy farmer and the backwoods' boy, with his ax, grindstone, and brawn, soon becomes master of the situation; but, doctor, I doubt very much your being a better man than I with the ax—and I have to hire someone else's arm to swing it for me.

One hectar (I prefer to figure in hectares, to which I am more accustomed—the hectar being 10,000 square meters) accommodates 625 cacao-trees, and clearing, planting, and the cultivation during two years costs you \$175, or \$1750 for 10 hectares (about 25 acres).

After the fifth year, these cacao-trees bear, on an average, from 1 to 1 1-2 pounds of seeds each. Figuring only 1 pound—or 625 pounds of cacao-beans to the hectar, at a selling-price of 40 cents a pound, makes a gross return of \$250 per hectar.

When in New Orleans, I investigated the question of pecan growing. Mr. F. A. Quinnette is perhaps the largest grower in Louisiana, and I visited his nurseries. Well, we down in Honduras can beat the state of Louisiana on that proposition. Pecans will do well where black-walnuts grow, and we have black-walnuts in my part of the Mosquitia. Besides, we have a better climate and far, far better soil—a sandy alluvian mold, chuckful of humus. And, just think of it, we can plant as many pecan-trees with our cacao-trees as can be planted alone, and, so, we can make our land produce a full crop of cacao-beans and a full crop of pecan-nuts.

Banana growing is not much of a proposition if you cannot ship them; but, with shipping facilities, a banana-plantation becomes a splendid possibility. Bananas, as a starting-crop, produce their first fruit one year after planting. You can plant one hectar to bananas for about \$50, including clearing and everything, inasmuch as you have the banana-plants ready to hand from the wild bananas already growing there. Once in bearing, you get a crop every week, which means a weekly income. It is never as big and good a business as that of cacao and pecan growing, but, it is good for the man with limited or no capital.

Now, as to the way of obtaining the land. You should buy at least 100 hectares (about 250 acres), which I can get for you for about \$100. This provides also for surveying, attorney's fees, and other legal costs. One-

half of this land I should plant to bananas and the other half to cacao and pecans.

As I have advised in my first communication, come out, some of you, and look the thing up. But don't all come, as I couldn't feed all of you; besides, my cook would surely go on a strike. She isn't much good, but then—well, she is the only cook in the wilderness and, so, she is, with just reason, proud of being the very best cook to be had.

And now, another topic: That the medical profession is represented all over the world by some of its best men there is no doubt; and that a country needing honest men in politics is apt to seek them among her doctors, is illustrated by the little Central-American republic of Honduras when she held her last presidential election.

Francisco Bertrand of Juticalpa, after graduating from the school of medicine at San Salvador, practiced his profession in his native town of Juticalpa, where, in company with Dr. J. A. Lobo, opened a drugstore.

In the year 1911, during the rebellion of Bonilla against Davila, Bertrand was called



Dr. Francisco Bertrand, President of Honduras

upon to finish the latter's term of presidency, accepting with reluctance an honor in which he saw no benefit either to himself or his country

He occupied the chair for one year, after which he turned it over to his successor, Manuel Bonilla, anticipating with pleasure his return to his native town and to his profession. But this was not to be; the office of vice-president was created and Bertrand was elected to fill this position, and

upon Bonilla's death in 1914 he again occupied the chair of the first executive.

His natural repugnance to dishonest practices soon roused the man to action, and he has stood forth, a veritable gladiator in his fight against the monstrous combines of foreign capital and native disloyalty, for the rights of his people.

When the people expressed a desire to send Doctor Lobo, the professional partner



Dr. J. A. Lobo

of Doctor Bertrand to Congress, the latter, seeing the necessity of some honest element in that body, urged him to accept, though the closing of their joint drugstore meant a very severe financial loss to them, since both are poor men.

Bertrand's almost superhuman fight against the trusts and for honest politics has impressed the people to such an extent that before his term expired he was nominated by the different political parties who buried their hatchets and, despite the combined efforts of his enemies, Bertrand was unanimously elected constitutional president of the republic, in October 1915, and took possession of the chair again on the first day of February, 1916, for the term of four years.

It was then that the enemies of right showed their fangs and sharpened their claws. A revolution organized in the United States was imminent and, as honesty was a quality necessary to save the country, governors and military commanders were changed all along the Caribbean coast, the part most exposed.

Doctor Lobo, financially ruined by his acceptance and election to congress, after the expiration of his term was about to open again a small drugstore in Juticalpa, but

when the president called him he accepted the post of military commander of Iriona, a seacoast town of only ten houses counting in the huts of the Caribs, a desolate place, but important as a strategic point for the disembarking of men and arms.

President Wilson, about this time sent the U. S. Ship Marietta on a pleasure trip to the Caribbean sea, and as a result, a steamer said to be loaded with war material was captured and a company doing business in Honduras and other central and South American countries received a severe reprimand from Washington.

President Bertrand, fighting for the rights of his people nevertheless sighs for his happy home and his patients by whom he is beloved, and Colonel Lobo expounds to me with enthusiasm his plans for the future, when he will open up his drugstore again.

Yes, oh yes, they are poor both of them, but on the other hand the admiration and love of the people is with their doctors, and I feel proud of being a doctor when we have men like these in our fraternity.

A. R. HOLLMANN.

Tegucigalpa, Honduras.

[We strongly advise anyone thinking seriously of investing in Honduras to investigate the situation in person before doing so. The profits on paper rarely turn out as expected. We can all recall the wonderful returns promised in oranges, figs, pecans, and other "bonanza" crops in this country—and we know how few have realized them. Read Doctor Mayo's article published last month, and you will understand some of the difficulties and problems of tropical life. Weigh these carefully before cutting loose from practice and friends in "good old United States," even to join such a good man as Doctor Hollmann. We have heard from several physicians who are considering the advisability of making a trip to Honduras. If you would like to join them, communicate with Dr. H. J. Abele, 3369 West 25th St., Cleveland, Ohio, or Dr. Axel Aberg, San Luis, Colorado. Doctor Hollmann has returned to Honduras, and, for the present, is at Tegucigalpa, where mail will reach him.—Ed.]

TWO CASES OF TYPHOID FEVER

I wish to report my experience with two cases of typhoid fever, that may be of interest to the profession at large.

Case 1. The patient, a boy of eighteen, a high-school student first was seen at his home

on August 25, 1916, and the following facts were elicited: He had been doing heavy work in a sawmill during vacation just closing and for the past week had had headache and indefinite pains in the back and skeletal muscles, felt listless and sleepy and tired easily. The severe headache had forced him to quit work and go to bed. There was moderate coughing, but only little sputum. He felt cold at times, chilly but no frank chill. I could hear a few rales in the upper part of the chest; his temperature (taken in the mouth) was 101°F.; the heart-sounds were normal. A diagnosis of grip was made and the usual treatment instituted.

The patient was not seen again until August 30. The cough was gone, but all the other symptoms were accentuated. The bowels were regular; few rose-spots were visible on the upper abdomen; the pulse was 90; the temperature was 102 degrees; the tongue was coated; the breath foul; there were sordes upon the lips; he was sleepy. A Widal test indicated that we had to do with typhoid fever; the state board of health laboratory reporting on September 1, that this test was positive 1:50. On September 6, when I paid my last visit, the patient's pulse was 70 and his temperature normal. He had had no fever for two days, was feeling well, and was sitting up in the chair. On September 15, he went to school and has since been attending regularly.

Case 2. The patient, aged twenty-two, also a laborer in the sawmill, boarded at the same house as the boy of the preceding case, and was first seen on August 30, at my office. I was not told at that time where he lived. He had been sick for several days, complained of severe headache and backache, said he had fever and was very somnolent most of the time. His tongue was coated; had foul breath; bowels were regular (once daily); had no chills, but felt chilly; coughed a great deal and raised sputum with difficulty. His pulse was 95, his temperature 103°F. I told him he had grip and to go to bed. The usual treatment was prescribed.

The patient was seen again on September 5 and found to be worse. His eyes had a heavy, dull look; the cough was about the same; pulse, 100; temperature, 103.5°F.; sordes. I now diagnosed typhoid fever, took blood for the Widal test, and sent him to the hospital. On September 6, the state board of health laboratory reported the Widal positive 1:50.

On September 18 the patient left the hospital and walked home, a distance of one

mile. He had had no fever for a week, had been on full diet for four days, and walking around for two days. On September 25, he went to his regular work.

Neither of these two young men had ever had typhoid fever nor had they been vaccinated against it. Neither had any delirium or tympanites. One lost 6 pounds, the other lost 10 pounds. Both began to improve from the start and so continued into convalescence. No complications developed. Patient No. 2 was put in a ward in the hospital where another man from the same boarding-house was down with typhoid fever. This man had been sick about three weeks and his sickness ran the same typical course that I observed in the hospitals of St. Paul, Minneapolis, and Duluth some ten years ago, where from 10 to 30 cases could be seen at a time during the autumn and spring of the year. This particular patient was toxic, wildly delirious, rampaging about the building with clothes torn off, wasting away; his stools were foul and he had a fearful breath. He was starved. About all the "nourishment" he got consisted of salol, phenacetin, sulphocarbolates, oil of turpentine, and saline purgatives. He was a sturdy fellow and, thanks to this fact, probably, after lingering along, teetering between life and death for a week or more, he managed to pull through leaving the hospital after seven weeks, a wreck of his former self. Then he went back to his folks, on a farm, to recuperate, but in all probability, will not be able to go to work for many weeks to come.

What is the answer? What is this wonderful cure that I have discovered? I will tell you—and I claim no originality for this method of treatment, which I have carried out successfully for the past seven years, in many cases, and with one death among them all. The patient who died, I will add, had a severe attack and was well along in the disease; he was starved and delirious when I first saw him. He would take neither food nor medicine, even from his brother, but when these were introduced with the stomach-tube, he would tickle his throat with his finger until he vomited all medicine, and would forcibly expel any nutrient enema as soon as it had been administered.

Briefly, my treatment is as follows:

The patient receives the usual care as to toilet, and so forth, that is ordinarily given. He gets a tablet containing calomel and phenolphthalein, of each 1-10 grain, until ten or fifteen doses are given, these followed by aromatized castor-oil, if necessary, to

ensure a thorough cleanout. Then I start in with copper arsenite, 1-50 grain (1 granule) every four hours, and calcreose (Maltbie), 4 grains every four hours; alternating the two, so that the patient receives medicine every two hours. At the end of twenty-four or thirty-six hours, if no appreciable drop in temperature or amelioration of symptoms are apparent, I increase the copper arsenite to 2-50 grain, but the calcreose is not changed. If the temperature goes above 102.5°F., I order cool sponge-baths to last not to exceed fifteen minutes.

As long as the temperature is 100 degrees or above, I limit the food to buttermilk, sweet milk, custards, milk-toast, clear soups, orange-juice, lemonade, and well-cooked cream of wheat or oatmeal with milk and sugar to taste. Meat is taboo. The patients will not starve on this diet, and I have never seen bad effects follow this regimen. Blanc-mange, gelatin puddings, rice, cornmeal mush, and such like may, from time to time, be added to the foregoing list, until the patients are eating anything in reason, except meat, pickles, and any food known to be indigestible.

Furnish a mouthwash composed of the antiseptic liquor (U. S. P.) and a little solution of peroxide of hydrogen and compound tincture of cardamom and see to it that the teeth and tongue are thoroughly brushed with it after each meal. An alcohol or saturated-brine-rub once daily at least is refreshing. Attention to the small things make for comfort, and any effort in this direction is appreciated by most patients.

The copper arsenite, of course, is not a new remedy; however, it is much neglected, although a most valuable one. Wood, in his "Therapeutics," merely makes mention of this drug as being Scheele's green and containing 54 percent of arsenous acid. So, also, Potter merely refers to it as an ingredient of Scheele's green, mineral green, and paris-green, used as insect-poisons, and adds: "It is highly poisonous. Dose, 1-100 grain daily, in divided doses."

I first saw this copper salt mentioned, as a remedy in typhoid fever, in *The Medical World*, about eight years ago, by an old practitioner. I think his name was Anderson and he practiced in Missouri. I began its use cautiously and sparingly, after reading all I could find about it. However, the indications given in my works of reference were vague and the dosage recommended was infinitesimal. So, I got no results from it. Nevertheless, that old doctor had been so positive in his statements that I persisted

in its use, gradually increasing the dose, until, in fear and trembling, I was giving 1-50 grain three times a day. Then it was that I began to note a change in the condition of this particular typhoid-fever patient—the temperature began to drop, the toxic symptoms abated, and then I pushed the dose still further, watching closely for symptoms of arsenical poisoning.

Let me say, right here, that I never have observed any signs of poisoning under my high dosage of copper arsenite, and I have given literally thousands of doses in these past seven years—and not alone for typhoid fever, but for summer complaints, diarrheas, and like conditions, where there was toxic absorption from the bowels; nor have I seen a case where I thought too much of the remedy had been given.

One interesting case I must mention here. On August 11, 1911, a man, walked into the office, complaining of headache and saying that he had been sick but a few days. I found his temperature (by mouth) to be 105.5°F. In the preceding February (the 28th), I had given this man an intramuscular injection of a full dose of salvarsan, for syphilis. (This, as you see, was very early in salvarsan-therapy in this country.) Now, he went through to usual course of typhoid fever, lost 65 pounds, and nearly died, but left the hospital on September 29, after a stay of seven weeks, and picked up rapidly. This is the only typhoid-fever case, so far as I can remember, in which the subject did not respond promptly to the copper-arsenite treatment, and it is barely possible that the previous injection of a powerful arsenical compound immunized him to a certain extent against the subsequent treatment with arsenic. If this be so, it will become increasingly difficult after a while to depend upon copper arsenite as a specific in typhoid fever, since arsenic now is being so widely used in many different forms for a variety of diseases.

Now listen: follow Potter and give 1-100 grain daily, in divided doses, and you will join the ranks of the many physicians to whom I have recommended its use, and who say that copper arsenite is no good. But this is my advice:

When treating typhoid fever, begin with the copper arsenite after a thorough cleanout, giving 1-50 grain every four hours to effect, or for twenty-four or thirty-six hours, and then gradually increase the dose to 1-25 grain every four hours, with plenty of water. Alternate the copper with calcreose, which I have been adding during the last year or

two, and which I believe to be an improvement and to act as a synergist. Feed the patient; also keep his bowels clean. Have recourse to the usual hydrotherapeutic measures, if hyperpyrexia occurs. In general, pay attention to the comfort of the patient in matters of toilet, and so forth. After a while, let us hear what you have seen.

ALEXANDER BARCLAY.

Cloquet, Minn.

[The results secured by our correspondent in these cases speak for themselves and prove conclusively the value of elimination, intestinal antiseptics, and the maintenance of nutrition. In these days, we know that it is not desirable to starve a typhoid-patient and thus further lower his resistance.

There can be no question as to the value both of copper arsenite and of creosote in typhoid fever and other enteric disorders, and the form in which the latter was administered has proven particularly serviceable when such conditions obtain as were present in the first two cases described by Doctor Barclay.

We are given no information as to the character of the stools or the temperature-curve, but, every practitioner with experience has seen just such a clinical picture, and many times such a patient has been considered as suffering from "abdominal grip" and received large doses of quinine and some coal-tar derivative.

Indeed, in the mild or rudimentary form of typhoid fever, early diagnosis always is more or less difficult. Especially is this so when pulmonary symptoms are most prominent, rose-spots fail to appear, and the typical temperature-curve is absent. Moreover, it is in just these cases that examination of the blood proves uninformative.

Improperly treated, of course, more profound intoxication may shortly obtain and the gravest symptoms suddenly present themselves. It is for this reason that the institution of rational therapeutic measures at the very beginning is so essential and, as was pointed out in Candler's article, "The Modern Method of Treating Typhoid Fever," which appeared in the September issue of *CLINICAL MEDICINE*, the first step should be to administer to the patient 1-2 to 1 mil (Cc.) of a typhoid-bacterin (100,000,000 to 200,000,000 killed bacteria). Every exposed person, should, at the same time be given the typhoid prophylactic bacterin.

The basal internal treatment should invariably be more or less along the lines fol-

lowed by Doctor Barclay; that is, repeated small doses of calomel followed by a laxative saline and the administration of an effective intestinal antiseptic. We have found a combination of calomel and podophyllin more effective than calomel and phenolphthalein, and the sulphocarbolates, in 10- to 20-grain doses every three or four hours, preferable to copper arsenite alone.

As not infrequently happens, constipation may be a marked symptom in the early stages, and here the sulphocarbolates of calcium and sodium should be administered, without the zinc and the copper salts. Liquid paraffin may also be administered with advantage, the film of oil deposited along the intestine exerting a distinctly beneficial influence.

Not very long ago, an old physician stated to the present writer that for years practically all his typhoid-fever patients had recovered in three weeks under a course of calomel, creosote and "vaseline." However, whether the practitioner regards the sulphocarbolates or creosote as the ideal intestinal antiseptic, the fact remains that, where typhoid fever is even suspected, bacterins should be administered promptly. Whenever this procedure is followed, the disease-process certainly either will be inhibited or so mitigated in severity as to render the illness a minor affliction.—ED.]

GLONIN AS AN AID TO PARTURITION

For the meeting of graduates of a certain medical school, held at St. Louis a few weeks ago, each member was asked to bring a paper on some certain or specific drug that in their hands had proven a success in a series of given conditions. This is a "back-to-the-soil" movement, calculated to bring out the result of intensive practice. Having received great assistance from the "family," I feel it my duty as well as pleasure to add something to one general storehouse of relief-giving agents.

During the early days of my career, being called to a case of parturition, one due to having loved too well, but not wisely, I found a young woman, all alone, in the throes of the first stage; which had been long and severe. She was almost in collapse from fear, pain, and excitement; her heart action was weak, skin was cold. The labor-pains grew less intense as events progressed; the patient was unconcerned, unable (and unwilling) to assist; she tossed from side to foot of the bed, absolutely terrorized. After getting her to calm down and gaining her confidence, I proceeded to make an examination. Then, finding every-

thing normal and a good presentation, I gave her 1-150 grain of glonoin, in order to steady the heart and improve her circulation, so as to warm her up.

The result of this dose of glonoin really was magical—indeed, it did more than I was looking for or knew that it could do; for, the pains became more regular, firmer, longer, and rapid. In a few minutes the woman asked what I had given her. I wondered why. She said, "That little thing you gave me made those pains worse and more of them." In a half hour, I gave her another dose by mouth and, after some little time, she was comfortably delivered.

Ever since that, I have used glonoin, in 1-100-grain doses by mouth, in all cases of confinement where I have encountered similar conditions, and have found it to give the best results where you have a terrorized patient, with pains lax, nervous and cold, doesn't care what happens, wornout, and wearing out everyone else. I have failed to find any mention of glonoin as being a help in parturition, and in conversation with fellow practitioners I find that it is new to them. I report this, to hear from the "family."

L.

—, New Mexico.

[This is a valuable suggestion, deserving of trial and comment. We wish we might receive fifty such helps every month.—Ed.]

RHUS-POISONING CURED AND PREVENTED BY CALCIUM SULPHIDE

I have read with considerable interest Dr. J. M. French's article in the September CLINIC (p. 753), in which he relates how the sprouts of poison-rhus, when eaten will render any person immune from being poisoned by this plant. To this I wish to add that I know, from my experience, this to be true. However, there is one drawback: one can not always obtain the crown-leaves, while, moreover, some people are afraid to eat them, and will not. Consequently, your readers may be interested to hear what, by accident or, rather, by the pressure of emergency, I learned this last summer, for, it may prove useful information, and I hope that it will receive extended trial, as my own experience is not sufficient to establish my observations as a fact.

Last June, a woman stopped me as I was passing her house on the country road and asked me to give her some medicine for her poison-oak poisoning. There were vesicles

on her arm and an erysipelas-like eruption on the face. It so happened that I had none of the drugs with me that I had been in the habit of using for this affection; however, as I was looking through my case, the thought struck me that calcium sulphide might be worth trying. Acting upon the idea, I gave her a supply of the 1-6-grain granules and told her to take three of them first every hour for four doses and then, every three hours, and then to telephone me next morning as to her condition.

Sure enough, in the morning the woman reported being much improved, there being no more burning and itching, and she believed the blisters were drying up. I told her to reduce the dose to two granules every three hours and continue thus as long as needed. On the third morning, she reported being cured. I have had two other like cases, these being seen at the first appearance of the burning and itching, and they were relieved by the same course of treatment. The calcium sulphide seems to arrest the progress of the process in a few hours.

And here is another observation worth taking note of: The first woman treated tells me that she has been exposed several times since then, but has escaped being poisoned. She now believes herself to have become immune. One of my sons, who has always been susceptible to rhus-poisoning, worked among it during the past month, but as a precaution (on "suspicion"), during that time took two granules of the calcium sulphide every two or three hours, and he escaped an attack. I think there is something here worth inquiring into.

A. C. REPPETO.

Banks, Ore.

POISON-IVY: AND EXPERIENCES WITH POISON-OAK

Reading the articles in your journal regarding the treatment of poison-ivy, I am reminded that as a child in California, when four or five years old, I was twice poisoned with poison-oak, but when yet a school-boy, I learned that eating the plant was a preventive, and, with other boys, practiced chewing the leaves and twigs. So, I grew up considering myself perfectly immune, and I had no more fear of poison-oak than I had of any other plant. As a matter of fact, I have repeatedly gone out on a warm day and dug up poison-oak on my place and the only effect I ever experienced was, one time, the appearance of a few vesicles on the wrist, at

the margin of the sleeves, after having gathered and burned the poison-oak and being exposed to the contact and the smoke while being in perspiration.

As I grew up, I came to think of the chewing of the leaves as a prophylactic, as a mere superstition and my immunity as a mere coincidence, so, when later I was connected with one of the California sanitariums, where the poison-oak grew plentifully, and saw numbers of victims, I did not dare to advise them to chew the plant, fearing that they might contract a fatal edema of the glottis. From this, you may understand, that I was intensely interested to learn that chewing toxicodendron-leaves has been found to be a preventive here in the East, as told in Doctor French's communication in your September issue of *CLINICAL MEDICINE*.

G. H. HEALD.

Washington, D. C.

IRRITATION OF EYE FROM EMETINE.— THE CURE OF GOITER

Doctor Blue, of Memphis, has issued a warning to physicians, to be very careful not to allow any emetine-solution into the eyes; this accident, in his experience, having twice been followed by a very severe reaction. There is no pain at first, but in about eight hours there occurs an uncomfortable "scratchy" feeling, intense photophobia, and lacrimation, together with conjunctival and some circumcorneal injection. This condition lasted about two days.

Here is something that may interest some of the readers: Thus far, I have cured all cases of goiter in young people and relieved it in middle-aged patients by alternating, weekly, calcidin, in 2-grain doses four times daily, and arsenous iodide, 1-64 grain after meals.

F. J. BURNS.

Annapolis, Ill.

BRIEF NOTES, CULLED FROM OUR EXCHANGES

Adrenalin and salicylic acid act as vasoconstrictors.—*N. Y. M. J.*

For acne, berberis four times a day; and enough alkali to keep stomach sweet.—*Ellingwood's*.

Nicotine, adrenalin, histamin, morphine, strophanthin, and barium chloride act as vasoconstrictors.—*Berezin, N. Y. M. J.*

Antipyrin has no action on the cerebral vessels of a normal animal, but acts as a vasodilator in the presence of fever.—*N. Y. M. J.*

In considering substitutes for morphine, do not forget our old friend atropine. It is the best antispasmodic we have.—*Critic and Guide*.

Experience has conclusively shown the futility of looking to the medical profession for the solution of the narcotic evil.—C. E. Terry, *Am. J. Pub. Health*.

Hyoscyamus is a great pain reliever, which does not interfere with secretion as much as morphine; also a vasomotor stimulator.—*Alter, Med. Summary*.

Chloroform, amyl nitrite, strophanthin, caffeine, phenocol, p-aminophenol, pyramidon, cocaine, and chloral hydrate dilate the cerebral vessels.—*N. Y. M. J.*

For female gonorrhea, calcium sulphide, a grain every four hours. Swab vagina thoroughly with permanganate, then irrigate with it daily.—*Ellingwood's*.

For persistent headaches, monobromated camphor, 2 grains four times a day. If acidity dominates intestinal tract, sodium sulphate, 5 grains three times a day.—*Ellingwood's*.

Alcohols, all the synthetic hypnotics, ether, chloroform, acetone, caffeine, camphor, atropine, antipyrin, quinine, and salicylic acid, act as vasodilators.—*Berezin, N. Y. M. J.*

For sour stomach, flatulence, heartburn, and indigestion, E. H. Winkler (*Medical World*) uses the combined sulphocarbolates of zinc, soda, and lime.

When we get away from the idea of standardizing the dose, we shall be in a better position to cure our patients.—*Duncan, Western Medical Times*.

Anterior poliomyelitis: To reduce cerebrospinal congestion, the best remedy in the entire materia medica is gelsemium.—W. A. Marner, *Medical World*.

Several clinicians report good results, in whooping-cough, from helenin, a principle derived from elecampane—1-60 grain every two hours.—*Medical World*.

Despite the authorities, who always advocate the newest thing, codeine is a better cough reliever than heroin, and this excels morphine.—*Medical World*.

Arbutin, the active principle of uva ursi, is one of our best urinary antiseptics and toners of the mucosa of the urinary tract; 1-2 to 1 grain several times a day.—*Critic and Guide*.

R. C. Coburn says that, if morphine and atropine are given before operations, they should be administered one-half hour before operating; morphine and scopolamine an hour before.—*Med. Record*.

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

(Continued from November issue, page 959)

NOT to treat present symptoms, allowing them to take their course, forms an important part of the negative side of applied therapeutics, as in the case of infective and uremic diarrheas, the asserted manifestations of gout and so on. These and similar cases form a class of reactions that favor restoration of balance and tend to health. With these, we interfere at our peril; and they are to be disturbed only when circumstances remove all doubt as to the wisdom of such interference.

The occasion for positive therapeutics arises when, for any reason, the recuperative powers of the system itself have become inadequate; when the potencies that make for normal balance are so weakened that they cannot overcome the forces of the disease. It is at this point that we are obliged to resort to extraneous influences, bringing into action new powers that will work in the direction of restoring balance.

If the human organism were constant in its manifestations, never varying in its response to drug action, this would be a very simple matter. For then, in any specific disturbance, we merely should give the indicated remedy (for, experience has demonstrated that, in general, there exist specific relations between certain drugs and certain diseases), and rest secure in the knowledge that our patient already was on the road to quick and certain recovery. But in fact, this mode of therapy is not possible and, if it were, the practice of medicine would be merely a skilled trade, and not a profession.

The body on which the drug is to act is a highly complex organism. No two persons respond alike to the same remedy, and the same person does not at all times respond in the same way. Moreover, there are points of vantage, in time and place and mode, for the application of remedies, as I heretofore have pointed out, that must be learned and utilized, these involving the personal equation both of physician and patient. This it is that

levates the art of healing above empiricism and gives it a reason for being.

Interference.—Certain diseases, especially of the infective class, follow so definite a course that some physicians have held that, at most, their efforts should only aim at palliation; that the ball, once set arolling, will finish its journey according to rule, that all attempts to shorten it will be futile, and that suppression is not to be thought of; as for instance, in the case of scarlet-fever, measles, and typhoid fever. Still, nothing in nature runs its course without reference to environment, and it is but reasonable to suppose that, if our attempts to modify or control any disease have been unsuccessful, it is because we have not taken the right way—a way which does exist, and which may be discovered by intelligent persistence and perseverance.

Perhaps the phrase, "Begin in season," may prove the entering wedge to split the root of more than one disease now considered uncontrollable. The life of a disease, as of an individual, travels in a cycle, beginning feebly, gaining strength, declining, and in due season fulfilling its destiny and dying out. If, then, it could be attacked in its feeble, unresisting beginning, it would be overcome with far less effort than if the struggle be delayed.

A good example of the truth of this doctrine of interference, and its effective application, is seen in the case of epilepsy. When the aura gives warning of the starting of a train of events that will culminate in a seizure, then a proper stimulus (such as an inhalation of ammonia or swallowing a mouthful of salt), given during these early manifestations, it has been found, often will suppress or cancel the subsequent stages. So numerous other familiar illustrations might be adduced, all serving to emphasize the value of interference at the earliest possible moment.

Reinforcement.—In contrast with the principle of interference, yet, working in harmony

with it, stands the principle of reinforcement. The forces of the human organism, like all nature's forces, ebb and flow, now setting toward health and now toward disease. In this phenomenon of periodicity, lies the physician's prime opportunity; for, a study of these tides will enable him to take advantage of the healthward impetus, by reinforcing it with his remedy, and will admonish him when effort on his part would be vain or worse. Thus, the intelligent physician will administer the soporific at the usual time of the patient's sleep, when the trend of the body's habit is in that direction or he will give the digestive stimulant just before meals, when hunger is already stimulating the gastric secretions.

This tidal phenomenon is a sufficient explanation of many cases where drugs have either operated contrary to or divergent from their customary manner. The practitioner has failed to take advantage of the aid of the physiological wave; he has, perhaps, gone directly contrary to it.

It is as important a principle of therapeutics to assist by reinforcement the healthward set of the body's powers as it is to antagonize by interference their downward trend.

Thoreau never said a truer word than when he admonished, "Let not to get a living be thy trade, but thy sport." But, the thing is, how one can do that. Many whom I have known have advised young men to take up any kind of business but that in which they themselves are engaged. These advice-givers "hate" their own occupation; no matter what it may be, it is cursed: "all hard work little money, anxiety, disappointments, grovelings, bound to be a failure except perhaps for the few favored ones who are fostered by luck or too dishonest to fail." One man told me that in his early days he was engaged in the lumber business and that this by its trials nearly "finished" him in ten years. Then he went into the coal business, five years of which would certainly have ended him. Just before the end of that period though he shifted to selling real estate which was worse than either of the others—worse than anything else could be. But, then, he supposed he would have to stay in it now, because he was too old to take up with any new vocation. I asked what he thought he would like to do and got for reply "Well banking, or maybe brokerage." These, he averred, always paid, the hours were short, the work was genteel and easy, bankers and brokers were highly thought of. Since that conversation, I have become

personally acquainted with a number of bankers and brokers, and I find that a goodly proportion of them are no more satisfied with their respective occupation than this man was with his. One of them wished to be a painter, but never had the opportunity. Another wanted to make things with his hands, to be a creator, to build ships or railroads or maybe fine furniture, but somehow it had never come around that way for him. Still another had "just drifted" into a bank, as a boy, and had staid there; but, really, he would rather be in almost any other occupation.

I suppose it is so with all of us who make the getting of a living our trade, and not our sport. The fact is, that it is our own selfishness, our fear and greed and meanness, that afflicts us, and not our business. With Thoreau's principle to guide him, a man can follow any occupation whatsoever, and find joy in it, besides a living; without it, he must go every gait but the one he would.

Happy he whose daily work is recreation.

If a man is in business, he doubtless is more justified in calling attention to the excellence of his wares than would be a society man in extolling his good breeding, or, if a physician, to advertise the greater number of his cures. From one point of view, self-exaltation may be taken as a "bully joke"; and I doubt whether most business men who have succeeded in a large way have not in their self-aggrandizement felt some of the humor of the thing. Otherwise they would hardly have the assurance to indulge in it. At any rate, they must have felt it at first, but custom may have changed them—and it probably has—so that the humor of it is lost sight of after awhile and only the consciousness of the struggle for existence remained. But what a picture it becomes then! One would think a man would rather starve to death like a gentleman, or live like one on a dollar a week if need be. It reminds one of that ragged, illiterate scarecrow of a rimester, O'Kelley, who, when Walter Scott was traveling in Ireland, approached him with this effusion:

Three poets of three different nations born
The United Kingdom in this age adorn:
Byron of England, Scott of Scotia's blood,
And Erin's pride—O'Kelley, great and good.

and for which he received, in recognition, precisely what his supposedly delicate compliment called for—a small piece of money.

Some of us are so anxiously charitable that at times we neglect the cultivation of our own

affairs in order to inquire into the needs of our neighbors. I know one woman who was so desirous of doing good that she gave a loaf of cake (burned a little on the bottom) to a poor mother of a family, who, she was sure from shrewd observation, hungered for something of that sort. The poor mother of a family told me that she never had eaten anything so cheap as that cake, and didn't propose to begin then; and before my eyes put it in the swill barrel.

Once a man came to me with a subscription paper to buy flannels for a boy who seemed to him to be in urgent want of them, and lo and behold, it turned out that the boy had three suits of better underclothing than I could afford to wear.

Let us be charitable, by all means, for charity is sweet and high and twice blessed. But we need not be too anxious. God is not dead yet and knows what his children must have. It requires wisdom to exercise charity without "peeping and botanizing," to be helpful without smallness. Some of us do not give with high motive. We have our reasons.

Poor little Miss Charity Bowers
Was fearfully bothered by showers.
"If they'd only hold off,"
She declared with a cough,
"Until I have watered my flowers."

We are continually misunderstanding one another's plainest spoken words.

Once in a parlor talk on "Cause" I referred to Herbert Spencer's views of my subject. I said I would not quote his words, that would require too much time, but would state his principle simply, in my own way, thus:

"A man dies. What is the cause of his death? Cancer. Yes, but what caused the cancer? Eating tomatoes. But all people do not eat tomatoes, what caused him to? He liked them. But everybody does not like them—what caused him to like them? His constitution. What caused his constitution? His ancestors. What caused his ancestors? Well, protoplasm. What caused protoplasm? The sun. What caused the sun? *We do not know.* The cause of the man's death, then, we do not know, according to Spencer, and we ascribe it to cancer because cancer happens to be the nearest link in the chain of events which bound him to the real cause, which we do not know. This is the agnostic attitude. We do not know cause."

I did not at the time think it necessary to explain more carefully than I had done that

the illustration was a supposititious case, not a real one, having philosophy and not medicine for its aim. That was seven years ago. The other day a woman insisted with as much positiveness as good breeding would allow, that at that lecture she had heard me declare that eating tomatoes would cause cancer, that I had cited Herbert Spencer's philosophy in proof of it, and had even told of a man who contracted cancer by eating them!

If our friends, who really wish to understand, come no nearer than this to it, maybe we can afford to give the benefit of the doubt to our enemies, who appear maliciously to misunderstand us.

PRACTICAL POINTS FOR DECEMBER

Local anesthesia is especially indicated in septic cases. The preliminary use of morphine with atropine is as essential as in general anesthesia.—Jacoby, *Texas State Journal of Medicine*.

Infantile diarrhea:—If there is much vomiting, with pain and tenesmus, clear the bowels with calomel and castor oil. Give copper arsenite, 1-1500 grain every half hour, with gelseminine hydrobromide, 1-2500 grain.—Smith, *Medical Summary*.

Condylomata:—The treatment I have found most simple and effective and free from objection is, the application of lactic acid.—Watson, *Medical Standard*.

Condylomata:—Try applying powdered Bulgarian bacillus tablets.

When you want to acquire a fat crop of the other fellow's ear, eye, skin, throat, and other choice diseases, patronize the common towel and the public drinking cup.—Corwin, *Clean Living*.

When you've worked hard and tried to do your best, it is mighty hard to have to come home and listen to the publication of the "Daily Whine." Some men prefer the saloon.—*Clean Living*.

For irritative hacking cough, useless and exhausting, dissolve 1-64 grain codeine on the tongue every half hour for three doses, restraining impulse to cough.—*Medical World*.

Treatment of rheumatic iritis consists in the early and frequent use of atropine and dionin, with hot moist applications, and internally sodium salicylate in 5- to 10-grain doses.—W. L. Rhodes, *N. Y. M. J.*

Delphinine may be employed in tetanus, motor excitement, asthma, spasm in general; it lessens sexual irritability, conserving sexual strength. It has acted as a vesical tonic in the debility of old age.—Waugh, *Ellingwood's*.

Among the Books

NORTHCOTE: "SEX PROBLEMS"

Christianity and Sex Problems. By Hugh Northcote, M. A. Second edition, revised and enlarged. Philadelphia: The F. A. Davis Company. 1916. Price \$3.00.

It seems to be characteristic of the American people that they try to settle every kind of social problem by legislative means and only investigate and study the question thoroughly after passing laws which very often afterward are found to be unwise, if not impossible of enforcement. Among many other matters, the problems of the sexual life outside of the marriage relation have become subject to much hasty legal tinkering, and the results are far from having solved the difficulties involved. Indeed, in many instances, matters are worse now than they were before; for all that they may not be quite so evident. The author of the book puts himself on record as follows:

"Methods of coping with the huge evil of sexual impurity, by legislative and other measures, have usually the fault of beginning to work at the circumference of the phenomenon, on the false theory that the center and heart of it can thus be reached. To suppose that adequate remedies of this class of evils will be found in clearing the streets of children and young people after a certain hour, in getting up entertainments, checking the sale of sensuous pictures, and promoting other surface measures, is, to fall into a fatuous error. It would be as rational to think that we could curb the violence of a volcanic eruption by carting away a little of the refuse and scoria on the outskirts of the scene of disturbance, while the cone in the center, waxing ever hotter and more furious, continued to discharge vaster supplies of fiery matter."

Accordingly, the author has set himself to obtain, first of all, a complete and truthful understanding of the problem under discussion, without which any suggestions looking toward reform would be futile. The twenty-four chapters in which he examines sexuality in its various aspects are introduced by two that deal with a general discussion of the topic; after which the author enters into the heart of the matter by beginning his studies

with an investigation of sexuality in children and carrying this through the school-age to full maturity.

The author's views and statements are sound and conservative. He does not, for instance, fall into the error of so many writers on the subject of illicit intercourse, who assert vehemently and without qualification that absolute continence is possible—merely because they, themselves, have passed the years of storm and stress and their own fires now are only smoldering gently, if they are not completely burnt out. Nor does the author advocate the opposite idea, that sexual continence is injurious and that intercourse is required for mental and physical health. Rather he attempts to qualify these opposing views by attending circumstances and to counsel moderation in the matter of judgment. His study of the sexual problems confronting society is characterized by evidences of wide reading and deep thinking, and, in the opinion of the Reviewer, this book adds an important document to the literature upon the subject. Above all, it is absolutely free from everything directly or indirectly salacious, although the discussions are frank, but entirely dignified in language and free from every bias or suggestiveness.

FRIESNER AND BRAUN: "CEREBELLAR ABSCESS"

Cerebellar Abscess: Its Etiology, Pathology, Diagnosis, and Treatment, Including the Anatomy and Physiology of the Cerebellum. By Isidore Friesner, M. D., and Alfred Braun, M. D. With 10 full-page plates and 16 illustrations in the text. New York: Paul B. Hoeber. 1916. Price \$2.50, net.

Diseases of the cerebellum are peculiar, in that they give rise to disturbances in locomotion. Some—for instance, cerebellar abscess—are liable to occur in children, and it is the general practitioner who sees these cases early and upon whom their timely recognition involves. It is necessary, therefore, that the symptoms and also the causes of diseases of the cerebellum be understood. For this reason, a work like the one before us

is of service to every practitioner, even if he be not in position always to undertake the necessary surgical measures for the relief of the disorders diagnosed.

ALBEE: "BONE-GRAFT SURGERY"

Bone-Graft Surgery. By Fred H. Albee, A. B., M. D., F. A. C. S. Illustrated. Philadelphia: W. B. Saunders Company. 1915. Price \$6.00.

Among the many triumphs of aseptic surgery, those which have made possible conservative and restorative plastic operations on the bones by no means are of least importance. In the matter of bone-graft surgery, Doctor Albee has done, perhaps, more original work than has any other surgeon, and particularly his brilliant inlay bone-graft method is of service to orthopedists in restoring deformities as well as in permitting the healing of many forms of fracture that otherwise would fail of success. Doctor Albee's work is an important contribution to surgery. The book is well written and splendidly illustrated.

DAVISON AND SMITH: "AUTOPLASTIC BONE-SURGERY"

Autoplastic Bone-Surgery. By Charles Davison, M. D., and Franklin D. Smith, M. D. Philadelphia: Lea & Febiger. 1916. Price \$3.50.

Somewhat smaller than Albee's book on bone-graft surgery, this work by two Chicago surgeons likewise promises to fill an important place in surgical literature. The related subjects are treated in a manner that testifies to a wide personal knowledge and experience on the part of the authors, of the subject.

BACH: "ULTRA-VIOLET LIGHT"

Ultra-Violet Light by Means of the Alpine Sun-Lamp. Treatment and Indications. By Hugo Bach, M. D. New York: Paul B. Hoeber. 1916. Price \$1.00.

Within recent years, the method of heliotherapy has recorded remarkable results, more particularly in certain forms of disease that hitherto came within the province of the orthopedic surgeon; and, in our country, it is particularly Guy Hinsdale whose contributions to medical literature (for instance in the *Interstate Medical Journal* for March, 1914) served to popularize this procedure.

The impossibility, in many localities of obtaining a sufficient amount and degree of

direct sunlight caused investigators to look for substitutes, and the Alpine sunlamp, as a source of artificial sunlight, has secured an undisputed place in practice for the purposes of making available for the treatment of disease the ultraviolet rays that are the active agent in heliotherapy.

Doctor Bach's book provides a very acceptable guide for the many uses to which the "artificial sunlight," as derived from the Alpine sunlamp, may be put, discussing its employment in many skin diseases, in tuberculosis, wounds, and various other affections, in short, wherever exposure to direct sunlight has been found of value.

BAUGHMAN: "DISEASE IS SIN"

Disease Is Sin. By G. Llewellyn Baughman. Kansas City (Mo.): John A. Riley, publisher. Price \$1.00.

Although the title of this little book reminds one of Mrs. Eddy, it would be a mistake to assume that the author is a "healer." Far from it. He is a physician who believes in treating disease, primarily, by "fasting and prayer"; but he also wants to make sure that the intestinal tract is clean. In short, he preaches the gospel of "clean out, clean up, keep clean," physically, mentally and morally. And, after all, in a large number of cases, this gospel comprises "the law and the prophets."

HEWAT: "EXAMINATION OF URINE"

Examination of the Urine and other Clinical Side-Room Methods. By Andrew Ferguson Hewat, M. D., Ch. B. Fifth Edition. New York: Paul B. Hoeber. 1914. Price \$1.00.

A true "pocket-edition," this tiny, 3 by 5 inches volume, of 199 pages of text furnishes information on the examination of urine, blood, sputum, pus, gastric contents, and feces. The subjects are discussed in sufficient detail to be instructive, and this little book undoubtedly can be of much value for ready reference.

"DYKE'S AUTOMOBILE AND GASOLIN-ENGINE ENCYCLOPEDIA"

Dyke's Automobile and Gasolin-Engine Encyclopedia. Fifth edition, revised and enlarged. Treating on the construction, operation and repairing of automobiles and gasolin-engines. By A. L. Dyke, E. E. St. Louis: A. L. Dyke, publisher. 1916. Price \$3.32, postpaid.

The author of this book appears to be of a medical bent of mind; for, in 1900, he published "Diseases of a Gasolin-Automobile," and followed this, in 1904, with his "Anatomy of the Automobile"—overlooking in this, that anatomy should be studied before the attempt is made to diagnose and treat disease. However, the present edition of "Dyke's Encyclopedia" appears to be a worthy successor to and development of all previous publications. It is a large book of 824 pages, containing 2370 illustrations, an automobile-terms dictionary, besides a comprehensive index. There is also a supplement on the Ford, the Packard, and the King cars. Among others, we note a chapter on operating the car, on the care of the car, on the rules of the road, besides a great variety of other useful pointers. This encyclopedia certainly strikes us as being a most complete guide to car owners.

"AMERICAN YEARBOOK OF ANESTHESIA AND ANALGESIA"

American Yearbook of Anesthesia and Analgesia. New York: Surgery Publishing Company. 1915. Price \$4.00.

This "American Yearbook of Anesthesia and Analgesia," the first volume of which is before us, is a most worthy undertaking, the purpose of which is, to collect the results of investigations on the related subjects during the preceding year. Many articles on a great variety of subjects of interest to the anesthetizer are presented by authors who have acquired the right to express an opinion, by virtue of long and industrious and special studies.

We congratulate the editor, Doctor McMechan on the result of his undertaking and venture to predict that this and succeeding annual volumes will meet with deserved response on the part of interested surgeons and dentists.

KENDALL: "BACTERIOLOGY"

Bacteriology, General, Pathological, and Intestinal. By Arthur Isaac Kendall, B. S., Ph. D. Illustrated with 98 engravings and 9 plates. Philadelphia: Lea & Febiger. 1916. Price \$4.50, net.

The author of this volume, who is professor of bacteriology in the Northwestern University Medical School (Chicago), is an unusually successful teacher of his subject, of which he is, also, an enthusiastic student. His investigations extending over several years have been directed, more particularly,

to the chemistry and metabolism of bacteria, especially as manifested within the living body, so that, naturally, his work bears evidences of these researches, in which, in many ways, he is a pioneer. No need to say that this latter fact renders Professor Kendall's work all the more valuable, since its teachings enter into the modes of bacterial activity in the infected organism and explain the response of the organism by which immunity is established to a given infection.

An important chapter deals with the bacteria living in the gastrointestinal tract; others consider the practical topics of the bacteriology of milk, of the soil, water, and the air. The theoretical discussions are clear and concise, while Professor Kendall's ability as a teacher is evidenced by his literary style. Altogether, the book is to be recommended cordially.

HUEHNER: "DISORDERS OF THE SEXUAL FUNCTION"

A Practical Treatise on Disorders of the Sexual Function in the Male and Female. By Max Huehner, M. D. Philadelphia: The F. A. Davis Company. 1916. Price \$3.00, net.

Among the very many books on sex-matters with which the market is being overwhelmed, those that are really worth while and actually instructive can be counted almost on the fingers of one hand. The book before us belongs to this category. It is written with an unusual degree of conservative inquiry and freedom from personal bias, also out of an evident and wide practical experience.

The author deplors the fact that sexual neuroses are neglected by genitourinary specialists and that neurologists do not pay sufficient attention to the physical aspects of these affections. He attempts to bridge the gap and to render his book of service to both of these specialists, as also to the general practitioner, and, in the Reviewer's opinion, he has succeeded fully, at least so far as the general practitioner is concerned. The author's arguments are characterized by sound reasoning; they are free from assertions for which no reasons are given, and they evidently are the outcome of close observation and study.

As to the question of continence, that much disputed bone of contention, Doctor Huehner holds that continence not only is possible, but that it is not injurious. To be sure, by continence, he means (it must be observed) not merely the abstaining from

sexual intercourse, but the abstaining from salacious thoughts. "Psychic masturbation" is far worse, in his opinion, and far more difficult to treat than is the physical. This volume should be studied by every physician—it is full of important and useful information of the kind that they need for the benefit of their patients and clientele in general.

LEA & FEBIGER'S VISITING LIST

The periodical appearance of physicians' visiting lists is an indisputable reminder of the flight of time and serves to call to mind that a new year is coming. Lea & Febiger's Visiting List is a favorite with many physicians; it serves its purpose well, and has the customary additional information on various topics. If you are in the habit of using this booklet, doctor, better get your 1917 copy now, so as to have it ready on New Year's. It is issued in four styles: weekly, monthly, perpetual, and for 66 patients. Pocket size, substantially bound in leather, with flap, pocket, etc. Price \$1.25.

BLAKISTON'S VISITING LIST

Physician's Visiting List, 1917, P. Blakiston's Son & Co., Philadelphia. The regular edition, 25 patients per day. Price \$1.25.

This visiting list for 1917 includes an entirely new dose list prepared in accordance with the new United States Pharmacopœia. This will prove an exceedingly useful feature, as there were many changes, improvements in standards, new drugs and other material inserted. Doses are given in both the apothecary and metric systems and the solubility and important incompatibilities when called for.

STITT: "BACTERIOLOGY"

Practical Bacteriology, Blood-Work and Animal Parasitology; Including Bacteriological Keys. Zoological Tables, and Explanatory Clinical Notes. By E. R. Stitt, A. B., M. D. Fourth edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co. 1916. Price \$2.00, net.

This book on bacteriology is not merely a theoretical treatise on the subject, but it correlates the facts presented with the clinical problems and conditions in which the laboratory findings are made; and the same is true for the other subjects discussed, such as the study of blood and of animal parasitology.

Doctor Stitt is a teacher in the United

States Naval Medical School, a postgraduate school attended only by graduates of high standing, and this book of his has proved to be fully up to the requirements of that institution, so that it may confidently be recommended as sure of proving of service to the practitioner in his laboratorial examinations as well as—and more important—in the interpretation of his findings. The present, fourth edition, constitutes an advance over former ones, in that it takes account of medical progress in the subjects considered. Incidentally, we wish to commend to the user particularly the study of the passages set in smaller type (which not infrequently are carelessly passed over), as being of importance for a full understanding of the subject-matter. The book is practical and brought up to date.

MEDICAL CLINICS OF CHICAGO

The Medical Clinics of Chicago (The W. B. Saunders Company. Price \$8.00 for 6 bi-monthly numbers).

Among the interesting cases presented in the September number may be mentioned a case of acute miliary tuberculosis, one of syphilis of the liver, and one of syphilis of the stomach. There also are presented several cases of disease of the nervous system. The number is well up to the customary standard and once more supports what in this department we have said repeatedly concerning the actual and practical value of this form of publication.

FOX: "BACTERIOLOGY AND PROTO-ZOOLOGY"

Elementary Bacteriology and Protozoology. For the Use of Nurses. By Herbert Fox, M. D. Second edition, revised and enlarged. Illustrated with 68 engravings and five colored plates. Philadelphia: Lea & Febiger. 1916. Price \$1.75.

The first edition of this little book was reviewed in these pages some four years ago. In the present edition, some details have been added concerning general disinfection, the transmission of infection (especially with regard to those diseases spread by insects), and the peculiar phenomena of hypersusceptibility. The book is useful for those physicians whose medical studies lie far back and who wish to acquire a working-knowledge of the subject; it also will be of service to nurses who are in need of the kind of information here offered.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Answers to Queries

ANSWER TO QUERY 6230.—“Keloid.” I want to say that I have cured keloid by the compression method; collodion applied over the growth steadily for three months, stopping only for a short time in case pain sets in.

ELWIN D. ROBBINS.

Nashua, N. H.

ANSWER TO QUERY 6223.—“Morphine Addiction.” If G. W. S., Mississippi, will take one hundred times the quantity of morphine used by the 70-year-old widow mentioned, dissolve it in as many teaspoonfuls of boiled water as the doses would be for the one hundred days, then have her take a

teaspoonful dose and then let her add to the bottle one teaspoonful of boiled water as each dose is taken out, thus keeping the bottle with the morphine in it full all the time, he can cure his patient, and she will never suffer the slightest discomforts during the cure. I have tried it with several addicts and failed in not one.

WALTER MOFFAT.

Grand Rapids, Mich.

[Most physicians seem to find the gradual reduction method unsatisfactory—but opinions differ. We submit Doctor Moffat's suggestion and ask for expressions of opinion and reports of experience.—ED.]

Queries

QUERY 6258.—“Hodgkins' Disease.” J. M. D., New Mexico, has under his care a man of fifty afflicted with Hodgkins' disease, and he asks whether any kind of treatment offers a reasonable assurance of success. Unfortunately, no treatment is known that is particularly efficacious in Hodgkins' disease, or leukocythemia. However, frequent and thorough examination of the blood, as a guide to treatment, is essential. The prognosis must, to a certain extent, be based upon the number of red blood-cells per mil (Cc.), and the appearance of megaloblasts is most unfavorable.

Among the useful therapeutic agents there are, of course, the various reconstructant tonics and hematinics. The combined arsenates of strychnine, quinine and iron, may with advantage, be alternated with nuclein and neuro-lecithin. Liquor arsenii compound (Barclay) also is valuable. Berberine, in full doses,—to contract capillaries and for its action upon the spleen—may, also, prove advantageous. Strychnine and phosphorus

sometimes are helpful. Benzol, also, has been used with a certain amount of success. The employment of the x-rays is recommended by some. The various measures may be employed at the discretion of the physician.

QUERY 6259.—“Premature Alopecia.” E. J. H., Ohio, has a patient, male, aged thirty-one, whose hair has recently become hard and dry, as has also the scalp, and a spot the size of a 25-cent piece is bare and smooth. Also, the hair on his face is getting thin in places. Otherwise, the man seems to be in good health. Advice is asked for.

Premature alopecia may be idiopathic or symptomatic. The idiopathic form is very similar to the senile variety and occurs without recognizable cause, beyond hereditary influence. Loss of the hair usually begins at the vertex, although sometimes it starts anteriorly about the temples.

Idiopathic premature alopecia makes its appearance ordinarily between the ages of twenty and thirty-five, and more commonly

in men. The occurrence of this variety is ascribed to the fact that in certain families there is a distinct tendency toward sclerosis of the connective tissue and underlying aponeurosis of the occipital and frontal muscles, in consequence of which gradual atrophic changes in the hair-papillæ take place, and even compression (which reduces the vascular supply). Loss of the hair follows gradually and sometimes rapidly.

In order to arrive at a definite diagnosis in the present case, it would be well to send a scraping from the scalp and some of the hairs about the affected area to a good pathologist, for examination; for atrophy of the hair, especially localized, may be due to a parasitic invasion of the hair itself or of the hair-roots.

By way of treatment, the following stimulating lotion, rubbed into the scalp every second or third night, sometimes is of service:

Resorcin.....drs. 1
Quinine (alkaloid).....grs. 15
Castor-oil.....mi. 30
Alcohol, enough to make.....ozs. 4

In some cases, very good results have been secured by rubbing in, gently, a small quantity of antiseptoil. This should be applied with a piece of cotton wrapped around the finger-tip.

As a matter of course, the condition of the general health of the patient is to be considered.

You will find an instructive article on alopecia in Stelwagon's "Diseases of the Skin."

QUERY 6260.—"Retarded Menses." S. W., Oregon, asks us to suggest treatment in a case of retarded menstrual periods. During the past year, the patient, a girl of eighteen, "feels uneasy at the end of the 28-day term, but quiets down again, and the menstrual flow does not occur until six weeks from the previous one. She seems to suffer from congestion of the pelvic organs and complains of pain in her right leg during menstruation."

We should like to know a little more about that pain and wish you would find out whether gentle or deep pressure over the right ovary is painful and whether it produces a "muscular defense." On general principles, an interval of six weeks between periods in a girl of eighteen is not excessive and need not require treatment at all, unless there are definite indications. If the girl is anemic, the arsenates with nuclein will meet the indications. Be sure to maintain normal digestion and elimination. When she gets "restless," as you report, twenty-eight days after the last

period, a mild saline laxative may be quite sufficient to relieve the congestion and start the flow. Hot applications sometimes are of value, but, in a case like this one, should be given externally and by no means in the form of douches.

When she experiences the pain in the right leg, is there evident any enlargement, puffiness, tenderness upon pressure or any variation from the normal? If you have further occasion to write about this case (and we hope it will be merely to say that the patient is doing well), please inform us more fully of her general condition.

QUERY 6261.—"Calomel and Calx-Iodata Reactions." H. C., Illinois, reports that a druggist was called upon to fill the following prescription: Calx iodata, gr. 1; calomel, gr. 1-2; milk sugar, grs. 3 1-2. Dispense 12 such powders. After mixing the ingredients, the powder assumed a light-pinkish color. The druggist's curiosity being aroused by this change, he added a little water, whereupon the powder turned yellow. Our correspondent now asks: "Have you had any comment to make upon the incompatibilities of calx iodata or any information to offer on this subject?"

As is well understood, mercurous chloride (calomel) is oxidized to mercuric chloride by iodine. If an iodide is present, then the soluble mercuric iodide is formed. The reaction proceeds best in an acid solution.

Iodized calcium (calx iodata), of course, contains free iodine, which, it is believed, is liberated in the stomach. As iodized calcium also contains excess iodides, we are disposed to consider the administration of calomel and iodized calcium together undesirable. The pink color produced was due to the formation of a small amount of mercuric iodide, resulting from the oxidation of the calomel by the free iodine present in the calx iodata. After the addition of water, the calcium iodide present reacted with the calomel and yellow mercurous iodide was formed.

QUERY 6262.—"Thyroidal Fistula?" T. H. S., Texas, has under his care a boy nine years old, in whom, the Doctor writes, about three years ago, "a painful swelling of the parotid gland (not mumps, supposedly) appeared, and after a few days the inflammation extended down the side of the neck to the region of the thyroid gland. Then, as it appears, the thyroid gland suppurated and a small abscess followed. Ever since, there has been a fistulous opening into one of the thyroid

lobes (presumably), and every few weeks there exudes a clear looking pus-free serum. Otherwise, the boy is well. He does not seem to have hypothyroidism. He is growing and is apparently normal. What is your opinion about this?"

We wish that you would give us a clearer idea of the exact location of the fistulous opening. It might be well also to have a specimen of the exuding serum examined by a good pathologist.

True thyroidal fistulas, as you know, are extreme rarities, in fact, almost unknown. Congenital fistulas (thyreoglossal) are observed in the median line, that is, between the anterior borders of the sternomastoid muscles.

In the case under consideration, it would be reasonable to assume that some such congenital abnormality existed as an incomplete branchial fistula and, a cyst ultimately forming, infection may have extended into it from the parotid gland, which eventually ruptured outwardly with a resultant fistulous opening. Of course, any of the glands beneath the ramus of the jaw might have broken down and discharged externally. Remember that the parotid glands not only drain the aural meatus, the tympanum, part of the cheek, and the temporal region, and empty into the deep jugular and substernomastoid lymphatic chain, but also have an inner chain (the subparotid glands) which drain the nasal fossæ, the lateral pharynx, and the eustachian tube. At times they give rise to deep pharyngeal abscesses.

If you will study the anatomy of the region and if possible the chapter on diseases of the glands and lymph-vessels of the neck, in Keen's "Surgery" (Vol. III), or the discussion of the same subject in Thomson's "Diseases of the Nose and Throat" or in any modern work of like character, you will, we feel sure, be able definitely to recognize the condition with which you are contending.

QUERY 6263.—"Rhamnus Californica for Rheumatism." J. P. N., Oklahoma, has found rhamnus californica very useful in rheumatic conditions. He is looking for information regarding this drug.

Rhamnus californica has been credited with exerting decidedly remedial action in some cases of rheumatism, vague muscular pains, and dysmenorrhea. Of course, it is closely allied to cascara, or, rhamnus purshiana.

Rusby, in *The American Journal of Pharmacy*, has made the statement that rhamnus californica ("California buckthorn," "Cal-

fornia coffee-tree") constitutes a portion of some commercial lots of cascara sagrada. It was introduced as a remedy for rheumatism by Webster. The latter says that he has found it effectual also in long-standing and obstinate cases of dysmenorrhea not requiring surgical interference. He does not deem it necessary to give it to the extent of producing catharsis.

QUERY 6264.—"A Question on Medical Ethics." H., North Carolina, submits some "professional cards" appearing in local medical and lay publications and asks: "(1) Are the 'ads' from the medical journal in good taste and ethical? (2) Are the newspaper 'cards' in good taste and ethical? (3) Are not the 'notices' in medical journals 'advertising' just as much as if they appeared in any other publication? Both are designed eventually to reach the people. (4) Is the following card, running in a newspaper in good taste, ethical, and proper?" To wit:

Dr. X. Y. Z. Blank

Surgeon and Gynaecologist

Hours, 2 to 4 p. m. or by appointment.

Office, Granite Block, Suite 23

Our correspondent concludes: "I believe that it is as proper to announce modestly your location and line of work in a paper as it is to do so by word of mouth."

While the propriety of publishing a "card," such as the foregoing, in lay publications, is an open question among leaders of the medical profession, we, personally, hold that there can be no objection whatever to such a simple announcement in a local newspaper. Were any extravagant claims made, it would be entirely different. It is unfortunate, of course, that this particular professional "card" should appear, as it does, sandwiched in between those of a "leading chiropodist" and that of an "optometrist," and adjacent to that of a "chiropractor." This doctor certainly does appear in dubious company; but that, of course, is the fault of the managing editor. The latter might readily separate the "sheep from the goats" and, without giving offense, place the cards of reputable physicians, attorneys, and other members of established professions in a classification by itself, arranging the optometrists, chiropractors, and semiprofessional people generally in another group.

In large cities, publication of a "card" in the newspapers is not deemed ethical, but almost every country practitioner has his announcements in the local newspapers, which is the medium of information. A

great deal, therefore, depends upon the local custom.

The professional "cards" printed in the medical journal mentioned, appearing, as they do, in a publication supposedly circulating among physicians only, are perfectly ethical and proper. Thus, for instance, there is no ethical reason why Dr. A. B. should not state that his practice is limited to genitourinary diseases and that he can be consulted only by appointment. It is just as proper for Dr. C. D. to state that he is a G-U man and is prepared to execute the Wassermann, the Noguchi, and the complement-fixation tests. In fact, it is generally accepted that ethical "cards" may present the name of the practitioner, his residence, office-hours, and his specialty, if he has one. We present this subject for further comment.

QUERY 6265.—"Chillblains." F. D. P., Michigan, has under treatment a case of chillblains, which was contracted January, 1916, and persisted until the opening of spring; but, now, with the first cold spell of weather, the trouble is breaking out again, after remaining quiescent all this time. The patient, a woman, is of the so-called "bilious temperament" and takes enormous doses of chologog. Last winter, she bathed her feet in hot alum-water every night. Varying degrees of relief have followed the use of a mixture of 1 part of tincture of opium and 7 parts of dilute lead-water, applications of tincture of iodine, glycerine, poultices, flexible collodion (to constrict the local blood-vessels), and balsam of Peru. The question is what would be the best treatment.

We believe that your patient's chilblains can readily be cured by washing the feet with a good tar-soap and hot water, then applying camphor-menthol on gauze compresses. Balsam of Peru, drs. 2; carbenzol, drs. 2; lanolin, drs. 4, makes an excellent application. However, perhaps one of the most useful combinations is one composed of equal parts of camphor, chloral, and crystalline carbolic acid. This, after washing the feet well and drying, when applied with a camel's-hair brush, will promptly stop the itching.

Internally, give small doses of blue mass and soda, with podophyllin, at half-hourly intervals, every other night, for a week. Also strychnine and cactoid (or digipoten) three times a day, and the triple arsenates with nuclein after meals.

A coating of collodion in which orthoform has been dissolved has proven extremely useful in this writer's practice. Two or

three coats should be applied at bedtime—always after the foot has been thoroughly soaked in hot (preferably salt) water. Resorcin with ichthyol and tannic acid may be used if the skin is unbroken; 1 part of each being dissolved in 5 parts of water and applied at bedtime. Also, tincture of benzoin applied freely after a hot salt foot-bath serves the purpose excellently. Always improve the circulatory conditions and give eliminants.

QUERY 6266.—"Blue Scar Due to Carbon Deposit." C. O. R., Ohio, has a patient (a coal-miner) who some time ago was hit on the side of the face with a lump of coal and the wound left a blue scar, due to some coal remaining in the tissues. Our correspondent wishes to know how this discoloration can be removed.

Skin discolorations of this character are extremely difficult to remove. In most cases, excision being necessary; the fact that the insoluble substance is encapsulated explaining this difficulty. Microscopic examination of the tissue may show particles of pigment situated, in part, in the corium, but more often in the subcutaneous connective tissue itself. Practically the same condition obtains after tattooing; carbon (charcoal, India-ink, lampblack, etc.) or some similar substance being used for the black markings and, while it may be possible to remove superficial tattoo-marks, it sometimes is impossible to do so without an extensive plastic operation.

Ordinary slight tattoo-marks (powder-marks, etc.) often may be removed by pricking in hydrogen-dioxide solution. Or, under ethyl-chloride anesthesia (local), go over the area affected with a bunch of fine cambric needles tied with silk and dipped in glycerole of papayotin. To prepare the latter, take of papayotin, gr. 1; water, dr. 1; glycerin, drs. 3; dilute hydrochloric acid, gtt. 3. After thoroughly puncturing the tattooed area wipe off the blood and apply the fluid on gauze then bandage. Repeat the process, if necessary. Treat only a small part of the area at a time.

QUERY 6267.—"Oil of Chenopodium in Uncinariasis." J. B. Oklahoma remembers having read in CLINICAL MEDICINE of a new remedy for hookworm but has forgotten its name. He wants to try it on a patient who cannot take thymol owing to its depressing effect. The doctor asks our aid.

You doubtless have in mind some article on oil of chenopodium. Schueffner and Ver-

voort after extensive experimentation reported that oil of chenopodium is superior to thymol, naphthol, and eucalyptus-oil in the treatment of hookworm-disease. An article on the same subject appeared in *Public Health Reports* of October 2 1914. Also in *The Journal of the A. M. A.* of 1914 there appeared a paper by Levy which detailed some experiences (at Johns Hopkins), in which oil of chenopodium not only was found to be an exceedingly effective vermifuge but comparatively nontoxic in therapeutic doses. Later Salant and Livingston contributed an article to *The American Journal of Physiology* on the toxicity of oil of chenopodium. Personally we can confirm the statement there made that this oil varies materially according to the method of distillation and source of the seed. Comparatively small doses of some samples of oil of chenopodium may produce pronounced gastroenteritis or even convulsions in children while other specimens may be given in much larger amounts without causing any untoward effect.

It must be borne in mind that oil of chenopodium paralyzes but does not kill the worms so that they must be removed by means of free purgation, preferably with castor-oil. The single dose for a patient from six to eight years of age is 8 drops; 10 drops for one nine to ten years of age; 12 drops at eleven to sixteen years; and 12 to 16 drops for one over sixteen years. Schueffner and Vervoort administered 16 drops of oil of chenopodium every two hours for three doses, and two hours after the last dose a tablespoonful of castor-oil containing 1 fluid dram of chloroform. Personally, we should omit the latter.

The patient must be kept under observation during treatment, and, if sleepiness, depression or other untoward symptom is observed, the chenopodium must be stopped, active purgation induced, and stimulation instituted by means of strong coffee given by mouth or as an enema.

Should you try the oil of chenopodium in the case of your patient, we hope that you will report the result.

—
QUERY 6268.—“Odontoma.” B. O. G., Arkansas, has under treatment a man on the margin of whose upper jaw, between the gums and teeth, there is what seems to be some sort of hard deposit and which at first was thought to be a deposit of tartar, but later was found to be of bony structure.

This osseous tumor is square at the base, but a symmetrical oval at the top. It is hard as bone, not sore, causes no pain, but there is some secretion about it all the time, and at night some blood. The gums are firm. The tumor has been there now about two years. The local doctors and dentists do not know what it is and say that they never saw anything like it.

Such tumors may be simple or malignant and in nearly every case it is safer to remove them while yet small, rather than wait until, by rapid growth or other definite sign, malignancy is placed beyond doubt. Quoting Keen, “The operation itself consists in removing a tooth on each side of the growth so as to gain access to the bone. Then with a saw and bone-forceps all of the alveolar process and the tumor is removed.” In his “Practice of Surgery,” Keen says that it has been found that any less radical operation, even in apparently nonmalignant cases, is likely to be followed by recurrence.

Myeloid sarcoma is a common form of epulis; it usually occurs as a rounded outgrowth from the alveolus and is of a dusky reddish-brown tint.

It is just possible, of course, that this may be follicular odontoma. These growths arise in connection with the formation of the permanent teeth, especially the molars, and sometimes attain large proportions, particularly when occurring in the upper jaw.

You will find a very interesting discussion of tumor diseases of the teeth and a reproduction of a skiagram of odontoma in Volume 1 of Keen’s “Surgery,” page 784.

We are inclined to suggest that this man be advised to consult a competent dental surgeon in one of the larger cities.

—
QUERY 6269.—“Vertigo of Arteriosclerosis.” E. H. N., Missouri, submits a specimen of urine from a patient sixty-three years old, a farmer who always has been a hard worker, uses tobacco moderately, but doesn’t drink. At present, he voids from 2 to 4 quarts of urine a day. While he has always “felt good,” he had the grip in December, 1915, he never since then has been well and has lost 35 pounds in weight; but, as he used to weigh 220 pounds, he had plenty to spare. His chief complaint is, weakness and vertigo. His appetite is good enough and he sleeps well. In the morning he feels very well, but soon his head begins to swim and he becomes very drowsy, and will sleep a good deal during the day, when he will allow himself. There

is no discoverable heart lesion, but moderate arteriosclerosis.

This patient will need careful watching, in order to prevent uremic or cerebral accidents. The total elimination of solids is low and the presence of indican and skatol indicates insufficient metabolism. The renal cells and granular casts found in his urine indicate that there is irritation of the kidneys, while the clinical history (vertigo), aside from the arteriosclerosis, is suggestive of circulatory disturbance in the brain.

This patient is sixty-three years old; always has been a hard worker; is of good habits; has a good appetite; sleeps well; feels well in the morning, but soon is troubled with dizziness; is drowsy and sleeps a good deal in the daytime, "when he will allow himself." Here we have the evidences of the work that is put in by a mighty good physician—Dame Nature.

This man needs that sleep. He feels better after he has slept—and there is no reason on earth why he should not allow himself to indulge; the more so, as he may be said to have done his share in the course of his sixty-three years. Direct him to sleep an extra hour in the morning; then, after breakfast, to do some little work, without pushing himself, and to rest not less than two hours in the middle of the day. Then he may be allowed a moderate amount of work again, after which he is to rest once more.

Let the diet be simple and easily digested. Better forbid fried pork; although pork, well roasted (baked, really), is all right. Unless his teeth are good and he can chew well, it might be advisable to have his meat ground and prepared as, say, Hamburg steak; but he should partake of meat only sparingly. Milk, buttermilk, cereals, vegetables, and fruit will enable him to make out a sufficient dietary with your aid. It does not appear that this man needs much drugging, although iodine in some form (iron iodide or calcidin) will be of service. However, he should have galactenzyme tablets, taking three tablets between meals with a glass of milk.

THE INFLUENCE OF LIGHT UPON METABOLISM

While, in a general way, the influence of light upon metabolism is fairly well understood, almost nothing is known specifically about the chemical changes effected in the living body. This question has been approached more seriously by Dr. Pincussohn, of Berlin, who has reported his results thus

far found to the Congress of Physiotherapy (*Muench. Med. Woch.*, 1913, No. 16).

As a starting point, this investigator has selected the purin-bodies; and he sensitized his experiment animals (white-furred dogs) with the fluorescent eosin, while a powerful arc-light was used for illumination. It has been definitely demonstrated by these experiments that the metabolic changes of the purin-bodies are markedly enhanced, in proportion to the intensity and duration of the transillumination. Albuminoids also are similarly influenced; but this question is not as yet closed.

It is clear that these observations are bound to play a role in the management of diseases in which the chemistry of the purin-bodies is involved, notably gout and its congeners.

THE VACCINE-TREATMENT OF ASTHMA

It has been said truly that the multiplicity of drugs that are recommended for the treatment of any particular disease bears witness in an inverse ratio to our knowledge concerning that disorder. Among the diseases for the treatment of which a great variety of remedies have been recommended at different times, is asthma.

In recent years, those cases of asthma in which a bacterial cause could be shown to exist have been treated with more or less success along biologic lines. It would be a mistake to assume that the use of bacterins or vaccines always is successful, even though this often happens. In the last number of *The Practitioner* (1916, p. 573), however, Sir Leonard Rogers, of Calcutta, where the disease is particularly prevalent, reports a series of cases of asthma treated successfully with bacterins. These were always autogenous and consisted largely of diplococci and streptococci; several varieties of each organism being present. Rogers expresses regret that he has not been able, for the lack of time, to work out his method in detail, but the reports which he presents certainly are very encouraging and promise well for similar attempts.

This observation is certainly intensely interesting and suggestive. It immediately raises a score of questions in our own minds: For instance, is asthma in India the same in character as asthma in the United States? If so, are the microbes found in these cases causative, contributive, or merely accidental? What will autogenous bacterins do for *our* patients? Would germicidal substances be of any value in our therapy?

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